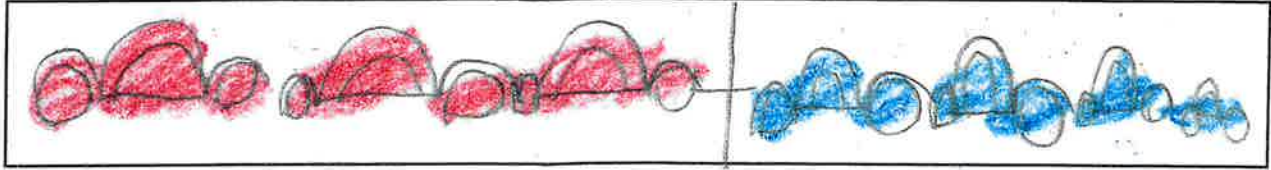


Name _____

94

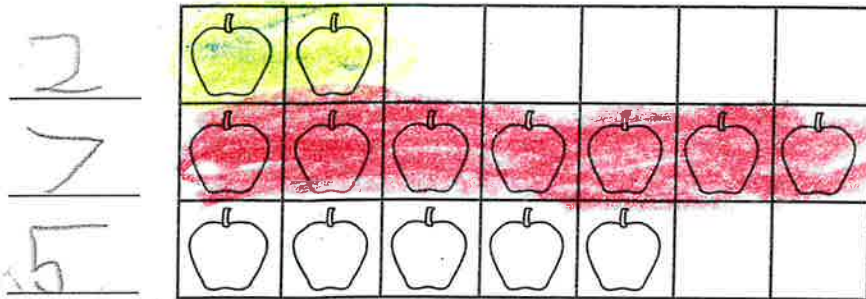
1. Robert counted three red cars and four blue cars in the parking lot. Draw a picture and write a number sentence to show the cars Robert saw.



Number sentence $3 + 4 = 7$ $3 + 4 = 7$

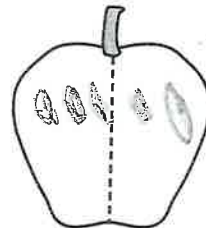
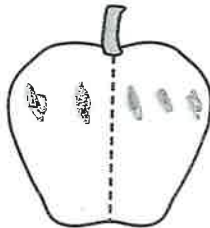
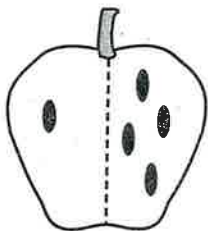
How many cars did Robert see? 7 cars *Don't forget the equals sign.*

2. How many apples are in each row?



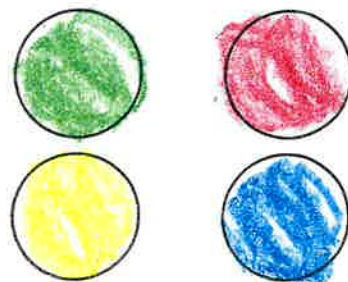
Use a red crayon to color the apples in the row with the most.
Use a green crayon to color the apples in the row with the fewest.

3. Write a number sentence for the first apple.
Draw different ways to show 5 apple seeds in the last two apples.



$1 + 4 = 5$ $2 + 3 = 5$ $3 + 2 = 5$

4. Point to the circle at the bottom left. Color it yellow.
Point to the circle at the top right. Color it red.
Point to the circle at the top left. Color it green.
Point to the circle at the bottom right. Color it blue.



Name _____
Date September 22, 2023

Saxon Math 2 (for use with Lesson 20-2)

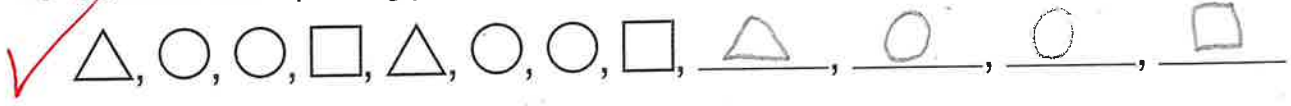
1. John has 8 pennies. Susan gave him 2 pennies. How many pennies does John have now? What type of story problem is this?

Circle one: Some, some more Some, some went away

Four children were playing. One child went home. How many children are playing now? What type of story problem is this?

Circle one: Some, some more Some, some went away

2. Continue the repeating pattern.

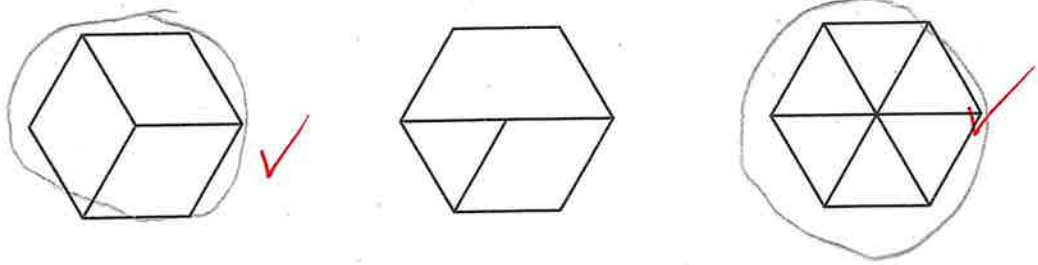


3. Write these numbers.

fourteen 14 ✓
sixty-one 61 ✓

thirty-five 35 ✓
seventy 70 ✓

4. Circle each shape that has equal-size pieces.



5. What is one more than 49? 50 ✓
What is one less than 20? 19 ✓

6. Add.

6 + 1 = 7 ✓ 5 + 0 = 5 ✓ 8 + 8 = 16 ✓ 0 + 7 = 7 ✓
7 + 7 = 14 ✓ 1 + 8 = 9 ✓ 3 + 3 = 6 ✓ 9 + 9 = 18

grade 2

100E+



Alexander the Great Quiz 1

Name _____

Alexander the Great was born in 356 B.C. He is one of the most famous rulers of all time. The name "Alexander" means ruler of men.

Alexander's favorite animal was a horse named Bucephalus. His name means oxhead.

Alexander rode him in every battle and named a city in India after him called Bucephala.

The story is told that Alexander was the only man able to ride the horse. Alexander figured out the horse was afraid of his shadow and turned the horse to face the sun. At the age of 12, Alexander won a bet against his father, Philip II and was able to keep the horse for himself. He is one of the most famous war horses in all of history.

Word Bank:

12	horse	Bucephala	356
Philip II	ruler of men	shadow	
Bucephalus	battle	sun	oxhead

100

Chapter 2-Entomology Test



grade 3

1. Entomology is the study of insects.
2. Insects use their antennae to smell and feel.
3. Compound eyes are made up of hundreds of lenses.
4. Another name for ocelli is simple eyes.
5. The three types of insect mouths are chewing, sucking, and sponging mouths.
6. The three body parts of an insect are head, thorax, and abdomen.
7. When an insect is molting it sheds its exoskeleton.
8. The wings on a dragonfly are called membranous wings.
9. This mouth part is used by butterflies to suck nectar from a flower.
proboscis
10. Some insects use mandibles to chop their food.
11. What is the outside covering of an insect called? exoskeleton
12. An insect's wings are attached to its thorax.
13. In a complete sentence name 1 way insects are beneficial. Be specific!
Insects are beneficial because they are food for birds.

96



grade 3

Homer Price Comprehension Test

1. What did Homer Price enjoy building?

Homer Price enjoyed building ra/dios.

2. What animal did Homer find drinking Tabby's milk?

Homer found a skunk drinking Tabby's milk.

3. What did Homer name this pet?

Homer named this pet Aroma.

4. What did the robbers steal?

The robbers stole the two thousand ^{dollars} -2
and one dozen bottles of after shaving lotion.

5. What happened to the Super Duper after the movie?

The Super Duper got his car stuck in a ditch and got himself caught on a barbed wire fence.

6. What type of business did Uncle Ulysses have?

Uncle Ulysses ran a lunch room.

7. What happened when Homer was in charge of the lunchroom one night?

There was too much batter and Homer -2
couldn't get the donut machine to stop.

8. What did the rich lady lose at the diner?

The rich lady lost her diamond bracelet.

9. What hobby did Uncle Telly, the sheriff, and Miss Terwilliger have in common?

Uncle Telly the sheriff and Miss Terwilliger all collected string.

Name _____

Score _____

90



grade 4

Cumulative Test

4A

Also take Power-Up Test 4

1. One hundred boats sailed on Tuesday. Three hundred boats sailed on Wednesday. Five hundred boats sailed on Thursday. How many boats sailed in the three days?

$$\begin{array}{r} 100 \\ 300 \\ 500 \\ \hline 900 \end{array} \text{ boats}$$

2. Lina had \$337. For winning the race, she was paid \$208. Then how much money did Lina have?

$$\begin{array}{r} \$337 \\ +208 \\ \hline \$545 \end{array}$$

3. Write 409 in expanded form.

$$400 + 9 = 409$$

4. If it is morning, what time is shown by this clock?



10:19 a.m.

5. What temperature is shown on this thermometer?



72°F

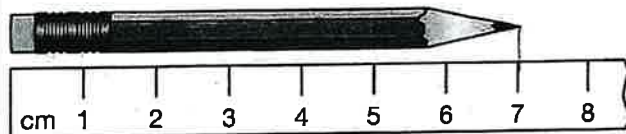
Compare

6. two hundred twelve two hundred twenty

$$212 < 220$$

7. 459 495

8. How long is this pencil?



7 inches

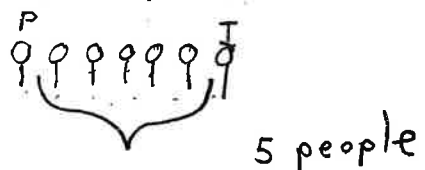
9. Round 62 to the nearest ten.
(20)

60

10. Round \$5.89 to the nearest dollar.
(20)

\$6.00

11. Piper is standing seventh in line. Isabel is thirteenth in the same line. How many people are between Piper and Isabel?
(5)



12. On the first day Elsa found thirty-one seashells. On the second day she found some more seashells. If Elsa found seventy-three seashells in the two days, how many did she find on the second day?
(11)

42 seashells ←

$$\begin{array}{r}
 73 \\
 - 31 \\
 \hline
 42 \\
 + 31 \\
 \hline
 73
 \end{array}$$

42

$$\begin{array}{r}
 73 \\
 + 14 \\
 \hline
 87 \\
 - 56 \\
 \hline
 31
 \end{array}$$

139

14. (13)

$$\begin{array}{r}
 573 \\
 + 296 \\
 \hline
 869
 \end{array}$$

15. (15)

$$\begin{array}{r}
 \$78 \\
 - \$29 \\
 \hline
 \$49
 \end{array}$$

\$49

Find each missing number in problems 16-18.

16. (16)

$$\begin{array}{r}
 a \\
 - 23 \\
 \hline
 56
 \end{array}$$

$$\begin{array}{r}
 56 \\
 + 23 \\
 \hline
 79
 \end{array}$$

$a = 79$

$$\begin{array}{r}
 79 \\
 - 23 \\
 \hline
 56
 \end{array}$$

17. (14)

$$\begin{array}{r}
 40 \\
 + b \\
 \hline
 79
 \end{array}$$

$$\begin{array}{r}
 79 \\
 - 40 \\
 \hline
 39
 \end{array}$$

$b = 39$

$$\begin{array}{r}
 40 \\
 + 39 \\
 \hline
 79
 \end{array}$$

18. (16)

$$\begin{array}{r}
 44 \\
 - e \\
 \hline
 24
 \end{array}$$

$$\begin{array}{r}
 44 \\
 - 24 \\
 \hline
 20
 \end{array}$$

$e = 20$

$$\begin{array}{r}
 44 \\
 - 20 \\
 \hline
 24
 \end{array}$$

19. $32 + 11 + 23 + 19 + F = 100$
(2)

$$\begin{array}{r}
 32 \\
 + 11 \\
 + 23 \\
 + 19 \\
 \hline
 85
 \end{array}$$

$$\begin{array}{r}
 100 \\
 - 85 \\
 \hline
 15
 \end{array}$$

$F = 15$

20. (3) How many Xs are in this pattern?
Count by threes.

XXXXXX
XXXXXX
XXXXXX

18 Xs

Name: _____

91

Caddie Woodlawn Test

Use the word bank below to fill in the word next to its definition. Not all the words may be used.

despair	<u>coaxed</u>	foreboding	escapade
tumultuous	pensive	vivacious	genial
inconsolable	earnestly	adage	titters

1. despair : loss of hope
2. pensive : deep in thought
3. genial : friendly
4. inconsolable : broken hearted
5. foreboding : predicting something bad, warning of ill to come
6. adage : an old saying
7. escapade : a reckless adventure
8. coaxed : gently persuaded
9. titters : nervous laughter
10. vivacious : energetically, in a lively manner

Use complete sentences to answer the following questions.

11. What is the setting of *Caddie Woodlawn*?

The setting of *Caddie Woodlawn* is Wisconsin 1864.

12. Who is the author of *Caddie Woodlawn*?

Carol Ryrie Brinck

13. What are two *important* historical events that happened during our story?

The important events were the Civil War and Abraham Lincoln getting shot.

14. How did Mr. Woodlawn get out of fighting in the war? Why did he choose not to fight?

Mr. Woodlawn paid someone to fight in his place because he had a family to take care of.

15. How does Caddie spend her silver dollar that she had been saving for so long?

Why does she choose to spend it that way?

Caddie bought tops, combs, handkerchiefs, and candy for the Hankens in boys. She chooses to spend it that way because the boys are losing their mom.

16. Why did everyone in the town go to the Woodlawn home to stay? Be specific!

Everyone went to the Woodlawn home because there was a worner of an Indian massacre.
(rumor)

17. Who were the two heroes of the fire at the school house? What did each of them do to help?

Obediah Jones and Caddie's dog were the heroes. Obediah put out the fire and the dog told it was coming.

18. What is one way Caddie changed over the course of our story? Why do you think she changed?

-3

Caddie changed in maturity and
bravery. why?

Write the name of the character next to the answer that best describes their role in the story of Caddie Woodlawn. All names may not be used.

Caddie - main character	Indian John - Woodlawn's friend	Robert Ireton - neighbor
Tom - eldest child	Miss Parker - Dunnville	Mr. Tanner - circuit rider
Warren - youngest kid	Obediah Jones - school bully	Katie Hyman - Tom's crush
Hetty - walking newspaper	Betsy - Woodlawn's horse	Annabelle - the cousin

19. Indian John a friend of the Woodlawns, made Caddie a doll made of corn husks and calico
20. Obediah Jones the school bully
21. Tom Caddie's oldest brother
22. Mr. Tanner the Circuit Rider
23. Hetty the "walking newspaper" of the Woodlawn family
24. Miss Parker the teacher of the Dunnville Schoolhouse
25. Tom Caddie 11-year-old, red-headed tomboy
26. Annabelle the Woodlawn's cousin from Boston
27. Katie Hyman the seamstress' daughter, received the much-admired Valentine from Tom
28. Warren Caddie's younger brother

-3

Following the Plan Chapter 2 Test

grade 4

Name _____

Date _____

9/27/23

93

well done!

1. Write three conjunctions that can be used to join simple subjects, simple predicates, or simple sentences.

and but or (3 points)

2. Write the forms of be:

am is are was were be being been
(3pts)

3. Write **C** for correct, **CS** for comma splice, **RO** for run-on sentence, and **F** for fragment.

RO 1. The baby seal had white fur the polar bear could not see it.

C 2. A polar bear likes to eat baby seals, but it has to find them first.

CS 3. The baby's fur is white like the snow, this helps to protect it from enemies.

F 4. A green caterpillar on a green leaf invisible to birds.

CS 5. The giraffe's spots looked like the leaves, the hunter could not see the giraffe.

C 6. The fox smelled the pheasant, but the pheasant hid in the leaves.

(6 points)

4. Combine each group of sentences in to one sentence. Remember to use proper punctuation!

A. Ayla drew the picture. Natalie painted the picture.

Ayla drew the picture, and Natalie painted it.

B. Clara learned to knit. Mayah learned to knit.

Clara and Mayah learned to knit.

C. Ben fed the dog. Ben fed the cat.

Ben fed the dog and cat.

D. Mother washed the clothes. Marianna hung them on the line.

Mother washed the clothes, and Marianna hung them on the line.

E. This barrel is strong. It will hold our potatoes.

This barrel is strong, for it will hold our potatoes.

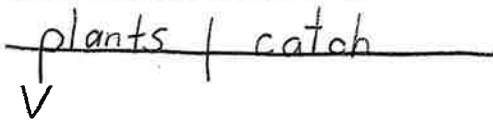
F. The kitten is ours. He is lively. He often gets into mischief.

Our kitten is lively, and he often gets into mischief.

(6 points)

5. Label your subject(s) and verb(s). Then diagram the sentence skeletons.

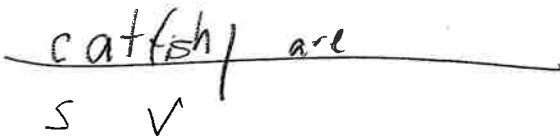
A. Some plants catch insects.



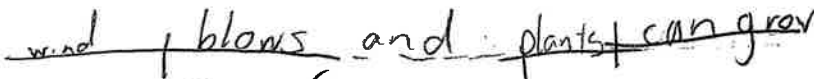
B. Reindeer scrape the snow away with their hoofs and eat the lichens underneath.



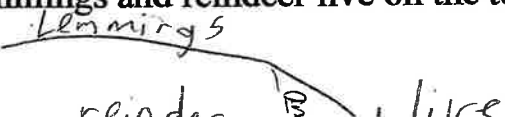
C. There are many catfish in this creek.



D. A fierce wind blows over the tundra, and only tough plants can grow.



E. Lemmings and reindeer live on the tundra.



(14 points)

6. *Underline the simple subject(s) in the sentences, then underline the correct words in parentheses.*

A. (There is, There are) some animals that look like plants.

B. (There is, There are) anemones and coral that look like flowers.

C. (There's, There are) an animal with five arms called the starfish. $\frac{1}{2}$

D. (There is, There are) an octopus in that tank.

E. (There's, There are) whales that are as long as eight elephants in a row. $\frac{1}{2}$

F. (There's, There are) giant squids that fight whales. $\frac{1}{2}$

(12 points)

41 / 44 pts

Mixed-Up Files Final Test

(98) Name: _____

Complete the sentence with the best word: (1 pt each)

1. She felt a great deal of fatigue after running ten miles.
2. Claudia was bored with the monotony of her life; nothing new ever happened.
3. She kept a stash of candy under her bed.
4. They only emerged from their hiding places after the guards left.
5. The builder helped hoist the bricks up to the second story.

Write the correct word with the correct definition: (1 pt each)

6. fiscal - relating to or having to do with money
7. ornately - elaborately or heavily decorated
8. mimicked - copied, repeated
9. metropolitan - relating to a large city

Word Bank: *you will not use all the words*

metropolitan	fiscal	extravagant	ornately
calculated	mutual	fatigue	stash
injustice	expenditures	mimicked	hoist
monotony	emerged	inconspicuous	outrageous
commotion	imposter	mediocre	

Label S for simile, M for metaphor, or P for personification (1 pt each):

10. S: The tree was as tall as a mountain.
11. P: The wind whistled a mournful tune.
12. M: The pillow was a cloud.

Label S for simile, M for metaphor, or P for personification (1 pt each)

13. S: The rain struck my face like tiny bullets.

14. P: The daffodils danced happily in the bright sunlight and warm breeze.

15. S: Good coffee is like friendship: rich, warm, and strong.

16. P: The tree slapped its angry branches against the house during the storm.

17. M: My brother is a bear in the morning.

18. The Kincaid children learn how to live inside the museum. List **two** normal life things that the Kincaid children have to figure out how to do in the museum, and explain how they do it

(3 points each)

A. Bathing, they go to a water-fountain.

B. Sleeping ⁱⁿ a bed that might have been a murder scene in the museum.

Complete the sentences with the best word: (1 pt each)

19. "That is outrageous^{SP}!" cried Matthew when he heard that ice cream was \$6 a cone. _{-1/2}

20. The kindergartener was an imposter when he sneaked into the fifth grade classroom.

21. The bulb glowed dimly and emitted gentle light.

22. Elizah was intrigued by the mysterious clue.

23. The pre-K student's first attempt at drawing was mediocre. _{OP 1/2}

Word Bank: *you will not use all the words*

outrageous

commotion

imposter

mediocre

disciplined

stealthily

triumphant

publicity

abrasions

counterfeited

consensus

intrigued

emitted

coincidence

familiarity

accumulate

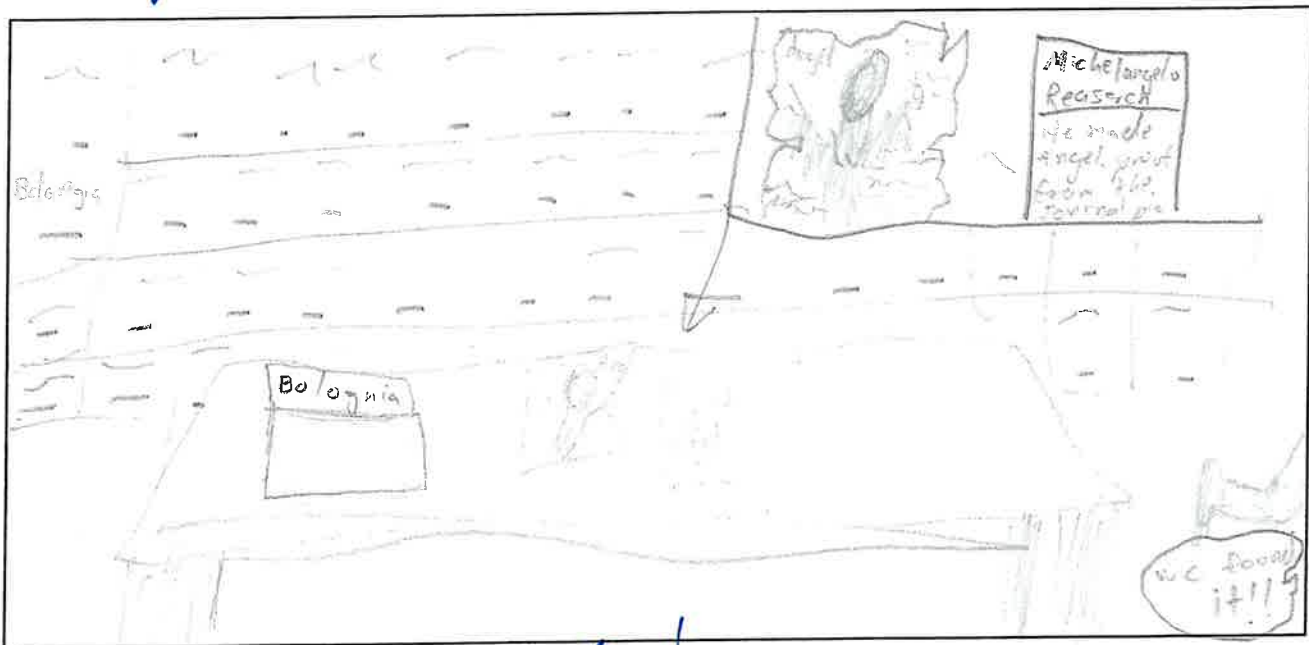
24. Why does Claudia run away, and why does she choose to go to the Metropolitan Museum of Art? (5 pts)

Claudia runs away because she thinks there is monotony and injustice in her life. The M.E.T. was big, ~~comfortable~~ inside and beautiful. comfortable!

23. Describe one way that Claudia and Jamie work to find information about Angel. (6 pts)

Claudia and Jamie go to a library to find info about Michelangelo and "Angel".
yes!

24. Draw a picture of what Claudia and Jamie find in Mrs. Frankweiler's files. Be sure to include the **item** itself and **WHERE** they found it! (6 pts)



Well done!

Science Test 2

98

grade 5

Name: _____

1. Cetaceans is another word for whales. (2 pts)

2. The two types of whales: (2 pts)

1. toothed
2. baleen

3. Explain how the two types of whales are different using a **complete sentence**: (4 pts)

Baleen whales have thin sheets hanging from their mouth and are usually bigger, ^{while} toothed whales have teeth.

4. Describe how whales move differently than fish using a **complete sentence**: (4 pts)

Whales move their fluke up and down while fish move their tails side to side. ✓

5. Explain why a whale needs a blowhole using a **complete sentence**: (4 pts)

A whale needs a blowhole so it can eat under water, their throat is not connected to their lungs like ours is. *oh, they use the blowhole to breathe!*

Write the correct word to fill in the blank: (6 pts)

6. The end of a whale's tail is called a fluke.

7. Baleen is a strip of bristled plates that hang from a whale's mouth.

8. When a whale sits straight up in the water, and spins, that is called

spyhopping.

9. When a whale leaps into the air and flops down with a splash, that is called

breaching.

10. A whale is beached when it gets stuck on the beach.

11. lobtailing is when a whale has its face in the water, and slaps the

surface with its tail.

Fill in the blank (1 pt for each blank):

12. Another name for a Killer Whale is Orca.
13. Because they make tweeting, chirping noises, belugas are sometimes known as sea canaries.
14. Narwhals have the nickname "Unicorn of the sea"
15. The biggest of all toothed whales is the sperm whale.
16. The largest of ALL creatures: Blue Whale
17. Known for its distinctive upside-down u shaped mouth: Right Whale
18. This whale is known for its singing: Humpback Whale
19. The tiny zooplankton that blue whales eat is called: krill
20. Describe one sense that God has given toothed whales, but not other whales. What is it called, and what is it used for? (Use complete sentences): (6 pts)

One sense that toothed whales have is echolocation or "sonar" to "see" things around them. the melon helps do this.

98

Name: /

History Test 2:

Using complete sentences, answer the following questions thoroughly.

1. Explain how Hammurabi ruled his people. What were his laws called, and why did he write them?

(4 pts)

Hammurabi ruled his people well and established the code of Hammurabi, laws that everyone had to follow.

2. Shamshi-Adad was feared by many. Explain why. (3 pts)

Shamshi-Adad brutally killed kings of taken over cities by cutting their head off and putting them on poles.

3. Where did the stories about Gilgamesh probably begin, and how did they begin? (4 pts)

The stories of Gilgamesh started as Sumerian oral legends told by campfires maybe.

4. Write about the two different types of tombs in ancient Egypt. Which kingdom used the first type?

Why did they move to a second type? (6 pts)

Old Kingdom - 1

Egypt first used mastaba tombs but as they got wealthier they started making pyramid tombs.

5. Draw a picture showing who the Hyksos were. Make sure to translate their name in your picture, and show how they succeeded taking over Egypt. Label as needed (5 pts):



6. Name three things you learned about Hatshepsut (phrases are fine!) (6 pts)

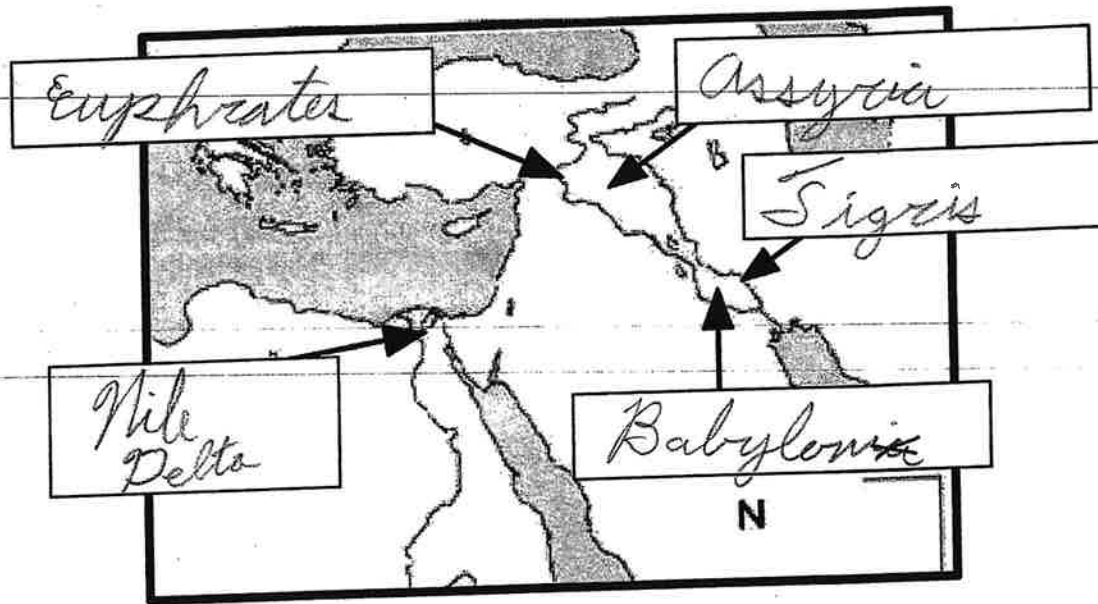
- A. Father wanted her to be king
- B. female ruler
- C. wore mens clothes with a fake beard

7. Name three things you learned about King Tut: (phrases are fine!) (6 pts)

- A. Most famous pharaoh
- B. tomb not robbed
- C. found by Howard Carter

6. Label (5 pts):

- Nile Delta
- Babylon
- Assyria
- Tigris
- Euphrates



Timeline: (12 pts)

- Creation and the fall
- The Flood and the Tower of Babel
- Mesopotamia and Sumer - 3500 BC
- Egyptian Civilization - 3100 BC
- Patriarchs of Israel/Egypt's old Kingdom - 2166 BC
- Assyrians/Babylonians/Egypt's Middle Kingdom - 1900 BC
- Israelite Exodus and Desert, wandering - 1446 BC

Name: _____ # _____

King Arthur Vocabulary Quiz - "The Two Swords"**I. Label the part of speech** for each vocabulary word **noun (n.)**, **adjective (adj.)**, or **verb (v.)**.1. peril noun2. vengeance noun3. desolation noun4. bewildered adj, verb5. wroth adj6. hermitage noun**II. Fill in the blank** with the vocabulary word that best completes each sentence. Use the words below as a word bank. Spell each word correctly. One word will not be used.

bewildered
vengeance

desolation
seneschal

scabbard
peril

7. Sir Gryflet wants to seek vengeance against King Pellinore for killing knights who pass by his pavilion.
8. Any knight who passes by King Pellinore's pavilion faces great peril, for he would smite any who dared to come.
9. King Arthur appointed Sir Kay to be the seneschal over all the lands and a true knight of his court.
10. Merlin says that without Arthur's leadership, Britain would become a country of ruin and desolation.
11. The knights were all bewildered, wondering why no one except young Arthur could pull the sword from the stone.

III. Applying vocabulary words12. Draw a quick sketch of a **scabbard**.13. Draw a quick sketch of King Arthur's face when he was **wroth**.

6th Literature

14. Draw a quick sketch of a hermitage.



15. What would be a good synonym for the word **bewildered**?

confused

16. What would be a suitable *antonym* for the word **peril**?

safety

IV. Vocabulary Usage

17-18. Use the word **vengeance** correctly in a complete sentence. Make sure to include context clues that show the meaning of the word.

My mom wanted vengeance on my cat when she spilled flowers all over the table.

19-20. Use the word **desolation** or **desolate** correctly in a complete sentence. Make sure to include context clues that show the meaning of the word.

After the fires, Hawaii is a desolate place.

21-22. Use the word **bewilder** or **bewildered** correctly in a complete sentence. Make sure to include context clues that show the meaning of the word.

Rosey bewildered me when she asked for markers to paint with.

31.25 / 35 (89)

Name: _____ / 9-27-23 35 total points

A Midsummer Night's Dream

I. Facts. Fill in the blanks. (1 point each, 17 total) (6.5)

- At the beginning of the play, Theseus is anxious for his wedding day to arrive, when he will marry Hippolyta.
- Hermia is in love with Lysander, but her father, Egeus, insists that she must marry Demetrius. If she disobeys, she will either die or not be able to marry anyone else.
- The fairy queen, Titania, is fighting with her king Oberon because he really wants her changling boy.
- The mechanicals, who include Bottom, Quince, Flute, and Song, are preparing the play called Pyramus and Thisbe.
- Puck, whose full name is Robin Goodfellow, transforms Bottom by giving him a donkey head, and the queen then falls in love him.
- When both Lysander and Demetrius insist that they are in love with her, Helena becomes furious because she thinks that they are mocking her for no one loved her before.
- (Answer 'Lysander' or 'Demetrius') At the end of the story, Lysander has been unenchanted but Demetrius remains under the influence of the magic juice.
- Puck says that the audience can think of the play as a dream if it disturbed them in any way.

II. Short answer. Answer in at least three complete sentences. (4 each, 12 total) (0.75)

- Tell about at least two ridiculous things that the mechanicals do with their play.
 Two ridiculous things that the mechanicals do with their play is they make a person be the moonshine. This is ridiculous because they could of just used the real moonshine.
 Another ridiculous thing they do is they make the lion speak, they make him tell the people that he is not a real lion but a human.

This is ridiculous because the people already know that he is not a real lion, and he does not need to speak.

2. Tell about two words or ideas that come up again and again in the play. Why are they repeated?

3.5

Two words that come up so many times in the play are: Moon and Dream. They are repeated because this play is at night so they talk about the moon, and everyone is acting crazy because of the moon.

The word dream appears a lot because all that is happening is strange so the actors just say it was a dream. + link that Puck makes between plays + dreams wonder if it

3. Agree or disagree with the following statement, and explain your answer with support from the text: "Oberon exerts a good influence on the events of the play."

3.25

I disagree with this quote. I disagree with this because Oberon fought and argued with his wife, and when she did not obey him, he forced her to by embarrassing her. This is wrong because he should not of forced her to obey him, he should of just let her keep the boy, this is not a good influence!

Any thoughts on him helping the loves?

7th Grade Early Modern Lit

III. Explain the context and significance of the following quote: "Weigh oath with oath, and you will nothing weigh; / Your vows to her and me, put in two scales, / Will even weigh; and both as light as tales." Your answer should include who said it, in what situation, and why it is important to the play. (6 points) 4

Hermia ^{x Helena} says this quote to Lysander. She says this after Lysander started loving Helena. This quote is important because Hermia is saying that if Lysander breaks his oath with her and then goes and makes another one with Helena, then his oath will weigh nothing. This means that his promises will not be strong, and he will not be trustworthy.

Hermia says this to warn Lysander of what would happen if he turned from her, and went to Helena.

fits w/ larger theme of love
being chaotic

41.25
43

96

Nice work!

Name: _____

43 points total

Age of Exploration & Wars of Religion

I. Fill in the Blank. Please leave TWO blanks empty. (28 points) 28

The Spanish conquistadors subdued several groups of native peoples in the New World, including the Aztec in modern-day Mexico, and the Maya in modern-day Central America. Many of the natives died of small pox from contact with Europeans.

The Spanish Armada attack took place in the year 1588.

The Calvinistic Protestants in France were called Huguenots.

When the Guise family ordered a massacre of a group of these Protestants, the French Wars of Religion started.

Phillip II of Spain (foreign monarch) supported the Guises during the French Wars of Religion, while Elizabeth I of England (foreign monarch) supported the Navarres.

The French Protestants were gathered together in Paris for (event/reason:) The wedding of the king's sister, Margaret, to Henry Navarre but the Catholics decided instead to attack them on St. Bartholomew's Day.

The cause of Henry III's death was

assassination by an angry Catholic monk.

Philip II was nicknamed the "most Catholic king".

When the Netherlands rebelled against Spain, it split in two, and the northern Protestants were led by William of Nassau/Orange.

France felt very threatened by the house of Habsburg because they were surrounded on all sides.

The Thirty Years' War was mostly fought in (location:)

Germany and began when Ferdinand's

rule began.

7th Grade Early Mod History

There were four phases in "the last religious war" -- the Bohemian phase, the Danish phase, the Swedish phase, and the France-Spanish phase. During the first phase of the war, the ✓ Prot. side initiated violence with the defenestration of Prague. Hustav Adolph was a great military leader and almost defeated the Holy Roman Empire in one phase of the war, but he died in battle and then his troops were pushed back.

The Peace of Westphalia ended the Thirty Years' War in the year 1648.

The Thirty Years' War led to more sophisticated weaponry and strategy, leading to kings keeping standing armies.

II. Short Answer: answer questions in at least 2-3 sentences. Be sure to address all parts of each question. (5 each, 15 total) 13.25

1. Who won the War of the Three Henries, and what did he decide for the country afterwards? What law did he pass, and what did it do? France would be officially Cath.

4.75 Henry Navarre won the war of the three Henries. He decided to become Catholic for the sake of his country. He knew that if he were to remain protestant it would tear France apart, because they had been catholic for so long and most of France was Catholic, it would become a turmoil of never ending civil war if Henry Navarre remained protestant. The quote "Paris is worth a mass" is attributed to him because of the turmoil that might arise if he did not become Catholic.

When he is king, Henry passes the edict of Nantes in 1598. This endures three things.

1. Huguenots are allowed to worship in certain areas
2. Huguenots are allowed to hold government offices.
3. Huguenots are allowed to have fortified cities in order to defend themselves.

7th Grade Early Mod History

2. Besides ending the Thirty Years' War, what did the Peace of Westphalia accomplish for the German states, France and the Habsburgs?

^{kept Austria}
The Peace of Westphalia allowed each German state to pick their religion, and that no one could enforce that one state had to be protestant or Catholic. It also greatly

3.5. Diminished the Habsburg power because they could not enforce that all the German states had to be Catholic. This ended the rule of the H.R.E. It also diminished the fact that Germany did not become very unified and did not participate in the finding and conquering of the new world.

3. We have talked about several instances in which Protestants and Catholics actually end up making an alliance and working/fighting together. Choose one of those examples and tell what happened and why these two opposing groups ended up working together.

One example was that Catholic France worked with protestant Sweden to defeat the Habsburgs. They work together because France feels threatened by the Habsburg power, and wants to see them defeated. When they work together they beat the Habsburgs when no one else has been able to. This is leading to the fact that politics and religion are slowly becoming more and more separate.

$\frac{+452}{47}$
 9790 grade 8

CHAPTER 2 Chapter Test B
 For use after Chapter 2

Tell whether each number is a real number, a rational number, an irrational number, an integer, or a whole number.

1. -0.75 2. $\sqrt{12}$ 3. 10

Tell whether the statement is true or false. If it is false, give a counterexample.

4. If a number is positive, then its opposite is negative.
 5. If a number is an integer, then the number is an irrational number.

Order the numbers in the list from least to greatest.

6. $-\frac{1}{5}, -0.25, \frac{1}{3}, 1$ 7. $-\frac{14}{3}, -4.6, -4.07, -4\frac{1}{3}$
 $\downarrow 0.2$ $\downarrow 0.3$ -4.6 $-4.\bar{3}$

Identify the property being illustrated.

8. $(x \cdot 0.5) \cdot 8 = x \cdot (0.5 \cdot 8)$
 9. $x + (-y) = -y + x$
 10. $2(5z - 9) = 10z - 18$
 11. $3a + (-3a) = 0$

Find the sum or the difference.

12. $3 + (+12)$ 13. $-22 + 16$
 14. $-0.8 + (-8.9)$ 15. $-16 - (-25.2)$
 16. $\frac{1}{2} - \frac{7}{10}$ 17. $7\frac{4}{5} + (-2\frac{1}{4})$

In Exercises 18 and 19, use the table below.

Name	Double eagle	Eagle	Birdie	Par	Bogey	Double bogey
Score	-3	-2	-1	0	1	2

18. In golf, the best total score is the lowest score. In 4 holes, you score a birdie, a par, a double eagle, and a double bogey. Your friend scores an eagle, a double eagle, a bogey, and a par. Who has the better total score?
 19. What is the difference between your friend's total score and your total score?

You: -2
 Friend: -4
 subtract

Answers

1. rational, real
 2. irrational, real
 3. whole, integer, rational, real
 4. true
 5. false - 7
 6. -0.25, -0.2, 0.3, 1
 7. -4.6, -4.6, -4.3, -4.07
 8. Associative Prop. of Mult.
 9. Commutative Property of Add.
 10. Distributive Prop.
 11. Identity
 12. 15
 13. -6
 14. -9.7
 15. 9.2
 16. -1/5
 17. 5 1/20
 18. Friend: -4
 19. -2

CHAPTER 2

Chapter Test B *continued*
For use after Chapter 2

Evaluate the expression when $x = -5.4$ and $y = 2.8$.

20. $y - x - 1.4$ 21. $x + |y - 10|$
 $2.8 - (-5.4) - 1.4$ $-5.4 + 7.2$

Find the product or the quotient.

22. $-6(-12)$ 23. $45 \div (-3)$
 24. $\frac{5}{9}(-\frac{3}{4})$ 25. $-7.2 \div 8$
 26. $-4 \div (-\frac{2}{9})$ 27. $-\frac{2}{3}(18)(-\frac{1}{4})$

28. A person buys items and sells them on a website. The table shows the profit earned for each item. Suppose that in one week the person sells 8 mantel clocks, 5 framed mirrors, and 3 candles. Find the average daily profit.

Item	Mantel clock	Framed mirror	Candle
Profit	\$4.13	-\$1.65	\$2.36

33.04 -8.25 7.08

Answers

20. 6.8
 21. 1.8
 22. 72
 23. -15
 24. -5/12
 25. -0.9
 26. 18
 27. 3
 28. \$4.55

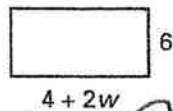
Simplify the expression.

29. $10x - (x + 3)$ 30. $-2x(x - 6)$ 31. $\frac{-6x + 15}{-10}$
 $10x - x - 3$ $-2x^2 + 12$ $\frac{1}{10}(6x + 15)$

32. Use the distributive property and mental math to find the total cost of 6 notebooks at \$3.95 each.

$5395 \times 6 = \$23.70$

33. Find the perimeter and area of the rectangle with the given dimensions.



$4 + 2w + 6 + 4 + 2w + 6$
 $12 + 4 + 2w + 4 + 2w$ $20 + 4w$ $6(4 + 2w)$
 $24 + 12w$

Approximate the square root to the nearest integer.

34. $\sqrt{35}$ 35. $-\sqrt{150}$ 36. $\sqrt{18}$

37. The area of a town's square is 14,400 square feet. Find the side length of the square.

Evaluate the expression for the given value of x .

38. $2 - \sqrt{x}$ when $x = 25$ 39. $4\sqrt{x} + 9$ when $x = 1$
 $2 - 5 = -3$ $4 + 9$

29. $9x - 3$
 30. $-2x^2 + 12$
 31. $3/5x - 1 1/2$
 32. \$23.70
 $3.95 \times 6 =$
 33. $a = 24 + 12w$
 $p = 20 + 4w$
 34. 6
 35. -12
 36. 4
 37. 120 ft.
 38. -3
 39. 13

89

Directions for Short Answers: In the space provided, legibly answer the following questions in 3-5 sentences. (You may use an additional sheet of paper if needed.)

1) List four differences/ similarities between the following three colonies:

Jamestown	Plymouth Plantation	Massachusetts Bay
lowest class ✓	higher class ✓	highest class ✓
just men ✓	more men and women ✓	more families ✓
started for profit ✓	started for religion (Separatists) ✓	started for religion (Puritans) ✓
traded within itself ✓	not as much trade ✓	big fence due to port ✓

x2

2) Put the following movements in the correct chronological order of when they occurred in history.

- The Founding of GA 4 ✓
- The French & Indian War 3/5 ✓
- The Renaissance 1 ✓
- The Scientific Rev. 2 ✓
- The Great Awakening 2/3 ✓

44

3) Considering your answer to #1... Why were the Colonies in New England more successful than the colony of Jamestown?

They were more successful because they had lots of support from England at first. Their main focus was religion because they wanted religious freedom. Since this was the case they were extremely strict on their laws and wanted everyone to believe what they did. They also had great economies especially Massachusetts Bay because they had the port. Jamestown wasn't unsuccessful but they were a lot slower at advancing and were always behind New England colonies.

Jamestown had closer ties to England

4) Disputes with Native Americans in New England led to two major wars. Briefly explain those wars and the years they occurred.

13

The first dispute was the Pequot war in ~~1737~~¹⁶³⁷. This was when the settlers attacked ~~found~~ catching them off guard and it invoked anger into the native americans. The second war was King Philip's War in ~~1775-1778~~¹⁶⁷⁵⁻¹⁶⁷⁸. This was one of the last straws for Native Americans and made them hostile toward England and anyone who came for it.

15) What was the last colony to be founded? Who founded it and what was the initial purpose of this colony?

The last colony was Georgia. James Oglethorpe founded it and it was used as a barrier between South Carolina and Florida because that still belonged to the Spanish at this time. It also was a place for prisoners from England to clean up because it was a lot of swamp land.

6) What changed in the Colony of Georgia in 1752 and how did the other twelve colonies view GA at this time?

In 1752 Georgia became a royal colony and wasn't all deserted anymore. At this time Georgia was viewed badly and more of a hindrance with no purpose. Georgia became more civilized and wasn't by itself anymore.

7) Explain the similarities and differences between the colonies of New England and the colony of Maryland.

Maryland was one of the first colonies and the New England colonies had been there long before. So they had a lot more experience in how to run a colony. New England had Plymouth which was made of Pilgrims which were separatists and Massachusetts Bay which were Puritans. Maryland was a place for Catholic refuge.

- 8) Explain how the Navigation Acts and the Lords of Trade sowed some early seeds of discontent in New England.

The Navigation act was making it so anyone wanted to sell anything and have it shipped would have to pay more and would have to pay even more if it was to anywhere not in England. England wanted majority of the trade because then they can make more profit by selling. The Lords of Trade were the ones who enforced this and they were anti-Puritan which made more mad. The people didn't want to have to pay England anything because they viewed themselves as independent but England did not see it that way.

- 9) What was the Great Awakening, explain how this movement laid the foundation for early American unity and how was this movement influential for the American Revolution?

74

The Great Awakening was when people started to not look at everything so religiously structured. They evaluated things on their own and this created unity because everyone was doing the same thing. When a bunch of people were all in the same mindset you can bond over it so they did. This movement was influential to the American Revolution because it showed them a little different ways of thinking and running things → like how a little more detail.

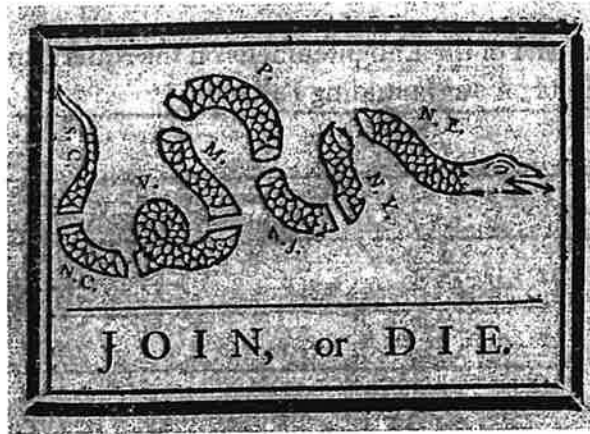
10) What was the impact of the Enlightenment on the American Colonies and what were some of its impacts on our Founding Fathers?

10/11

The Enlightenment was all about different ways of thinking and evaluating everything deeply. The way of thinking was very systematically and straightforward with no emotion. This made American colonies due the same especially in how they viewed England. Our founding fathers used this kind of logic against England when talking about being independent from them. So it influenced the founding fathers but did not control them.

How did it influence the founding fathers?

↳ What other social/regional movement impacted how our founding fathers saw the tenants of the Enlightenment?



- 11) The French & Indian War coupled with the experiences of the Great Awakening had given the colonists some sense of themselves as members of a larger American Culture. Benjamin Franklin's famous *Unite or Die* cartoon (see above) was the focal point of the of what conference and how did this conference lead to a sense of a national consciousness?

It made them realize that they were all in the same boat and were all following England's control when they didn't want to. It helped them see that they can remain separate as ^{colonies} ~~states~~ but work better for bigger fights as a whole. The Albany conference let them get a taste of independence.

It wasn't about independence, but more about unity. The colonies didn't view themselves as different from mother England at this point. They did want to form a common defense, until the English army could arrive.

14) Explain how men such as Edmund Andros (1686), George Grenville (1763), & Charles Townsend (1767) helped lay the foundation and fan the flames for colonists' resentment of the Crown by the 1770's?

(H)

All these men were very influential in the game between England and the colonies. They fed the flames by pushing the limits little by little. For example the townshend act was the last straw before the colonies got mad at England and fought the taxes until it was taken back. These men put the cherry on top, pushing just enough.
A little more detail

Essay-Directions: Choose one prompt from below and on a separate sheet of paper, respond to the essay prompt with a multi-paragraph response. Make sure that you do the following: completely answer the essay prompt, organize your arguments or ideas in a logical progression, and follow the common rules of grammar usage.

1. There are three major factors that are driving forces of history – religion, geography, and economics. Choose one of these themes and write a cogent response for the importance of that theme as it runs through and drives the early American history we have studied thus far.
2. The following phrases have described the American identity at different points in our history- “the City on a Hill”, “Nature’s Nation”, “the Redeemer Nation”, “Novus Ordo Seclorum” (America as the new order of the ages), another “The New Eden”. Pick one of these phrases and explain how the history we have learned thus far illustrates or supports your chosen phrase. This is your time to draw on any and all of your knowledge – use specific examples of events and readings to illustrate the big picture!

Essay

130

Religion is the driving force of history during the eighteenth century. People have been fighting for religious freedom for hundreds of years even back to Henry VIII. While geography and economics are both very important they don't stand out as deliberately as religion does. The reason for this is because when a person believes in something (like faith in God) it becomes something their passionate about. When you have strong faith in something it becomes a part of you that you want to share and have freedom in. So this is why it's the biggest factor and why it's stuck around for so long.

The biggest examples of these would probably be the first three colonies. The first colony was Jamestown which didn't thrive as much as the other two. A potential reason for that could be their focus, their focus was from the start profit while for Plymouth and Massachusetts Bay it was religion. It's not necessarily why it didn't do as well but it definitely could have affected their work ethic and rules. Plymouth and Massachusetts Bay had very strict rules because their rules were based on religion so they followed them very strictly, punishing anyone who did not. Their work ethic could be different as well because two ^{colony's} have in their minds to work for God while the other (Jamestown) is trying to work for their own personal gain.

As it was already stated, religion is a major factor in decisions and how people live. They made religion the center of their lives while still benefitting from it and growing their colony. England benefitted from Plymouth and Massachusetts Bay too, it was a more motivating and encouraging factor because everyone is with you with the same effort. Geography and economics do not have the same amount of passion in them. It's only seeking personal gain and profit but religion is also for honoring God. The colonies especially the Pilgrims wanted separation from the English - and wanted to run it a new way which is also big motivation; therefore religion is impactful and motivating to certain groups of people.

Name _____

Date _____

$\frac{34}{41} = 83$

grade 9

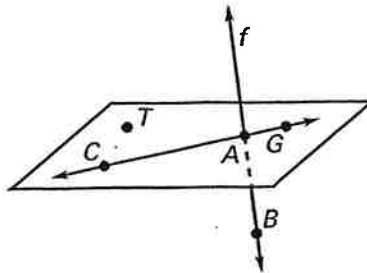
CHAPTER 1

Chapter Test A

For use after the chapter "Essentials of Geometry"

In Exercises 1-3, use the diagram.

1. Give two other names for \overleftrightarrow{AB} .
2. Name three points that are collinear.
3. Name a point not coplanar with A, C, and T.

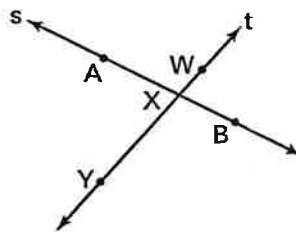


Answers

1. \overleftrightarrow{BA} , \overleftrightarrow{AF}
2. \overleftrightarrow{CAG}
3. B
4. line r
5. \overleftrightarrow{XW} , \overleftrightarrow{XB} , \overleftrightarrow{XA} , \overleftrightarrow{XY}

In Exercises 4-6, use the diagram.

4. What is another name for \overleftrightarrow{XW} ?
5. Name all rays with endpoint X.
6. Give another name for \overleftrightarrow{WX} .



6. \overleftrightarrow{XW}
7. 4.8
8. 2.4
9. 18
10. 37

Measure the length of the segment to the nearest tenth of a centimeter.



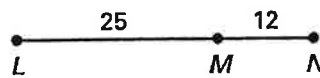
11. 2.8, 5.3, 6.3
12. 2.6, 5.3

Find the indicated length.

9. YZ



10. LN



13. (4, 2), (1, 5)
14. (6, 2), 1

Find the exact distance between the points.

11. A(2, 3) and B(4, 9)

12. F(-4, 6) and G(1, 8)

- (1, -2), (-1, -2)

Find the coordinates of the midpoint of the segment with the given endpoints.

13. A(-1, 4) and B(3, 6)

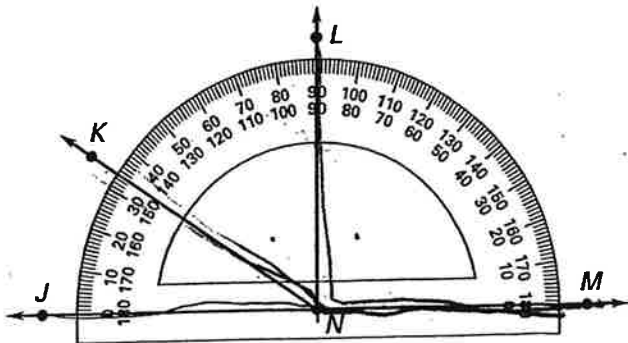
14. C(2, -3) and D(-4, -1)

$M = \left(\frac{-1+3}{2}, \frac{4+6}{2} \right) = (1, 5)$
 $(3+1), (6+4)$
 $(4, 2)$

$m = \left(\frac{2+(-4)}{2}, \frac{-3+(-1)}{2} \right) = (-1, -2)$
 $\sqrt{(4-2)^2 + (9-3)^2} = \sqrt{4+36} = \sqrt{40}$
 $\sqrt{(1-(-1))^2 + (5-(-2))^2} = \sqrt{4+49} = \sqrt{53}$
 $\sqrt{(1+4)^2 + (5-6)^2} = \sqrt{25+1} = \sqrt{26}$

CHAPTER 1 **Chapter Test A** *continued*
For use after the chapter "Essentials of Geometry"

In Exercises 15–17, use the diagram to find the measure of the indicated angle. Then classify the angle.



15. $\angle JNK$ 16. $\angle KNM$ 17. $\angle LNM$

In Exercises 18–20, $\angle 1$ and $\angle 2$ are complementary angles. Given the measure of $\angle 1$, find $m\angle 2$.

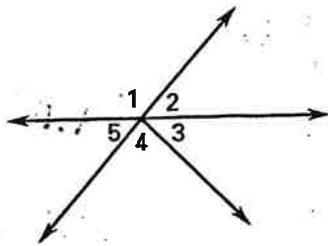
18. $m\angle 1 = 87^\circ$ 19. $m\angle 1 = 15^\circ$ 20. $m\angle 1 = 71^\circ$

In Exercises 21–23, $\angle 1$ and $\angle 2$ are supplementary angles. Given the measure of $\angle 1$, find $m\angle 2$.

21. $m\angle 1 = 8^\circ$ 22. $m\angle 1 = 87^\circ$ 23. $m\angle 1 = 115^\circ$

In Exercises 24–26, use the diagram. Tell whether the angles are vertical angles, a linear pair, or neither.

24. $\angle 1$ and $\angle 2$
25. $\angle 2$ and $\angle 5$
26. $\angle 1$ and $\angle 4$



Classify the polygon by the number of sides.

27. 28.

Tell whether the polygon is convex or concave.

29. 30.

Answers

15. 311°
acute
16. 146°
obtuse
17. 90°
right
18. 3°
19. 75°
20. 19°
21. 172°
22. 93°
23. 65°
24. Linear Pair
25. Vertical Angle
26. neither
27. heptagon
28. pentagon
29. concave
30. convex

-2 $\frac{35}{37}$ 95 A

grade 10

Modern European History Test B – Renaissance and Reformation

Name 9/19/2023

Fill in the Blank: Write the most accurate answer to the question in the blank provided. (1 point each)

- Michelangelo 1. Who sculpted David and Moses?
- The Prince 2. What book did Machiavelli write about politics?
- Pope Leo X 3. What pope opposed Martin Luther?
- Raphael 4. Who was famous for painting Madonnas?
- Leonardo Da Vinci 5. Who painted the Mona Lisa?
- German 6. What language did Martin Luther translate the Bible into?
- Jesuits 7. What group did Ignatius Loyola form to spread the Catholic faith?
- Erasmus 8. Who published a scathing critique of Pope Julius II?
- Elizabeth I 9. List two children of Henry VIII.
- Mary (Bloody Mary) 10.

Use complete sentences to finish the test. Remember to write in cursive.

Short Answers

1. Why did the Renaissance start in Italy? (2 points)

The Renaissance started in Italy because Italy had money and culture. They had money because of the Roman Catholic Church and also because of the many rich families living there. They had a lot of culture through things like ruins, artifacts, and documents. This is because they are nearby where ancient Greece and Rome were. Because of the money they had they were able to spend time exploring and learning about the culture and history around them.
good reasoning

0

2. What is humanism? (2 points) Is it compatible with the Biblical worldview? (1 point)

Humanism is the view that humans are incredible creatures and that they are capable of great things. It recognizes that humans are above other creatures and capable of incredible intelligence. It's overall the fascination with what an amazing creation man is. It can be compatible if it is not taken to the extreme. As Christians we recognize and agree that humans are made in God's image and are a wonderful creation that is capable of great things. However, there is an extreme. For example, one document we read told how man could become an angel or god, which is an extreme that is not compatible with Christianity.

great
support
from
a doc.

3. What are two ideas that the Renaissance and Reformation had in common? (2 points)

One idea was that everyone should think for themselves. In the Reformation this referred to doctrine and reading the Bible for oneself, while in the Renaissance it referred to politics, science, and things like that. This leads to the second thing they have in common which is the support of education. Because of what was stated above both also supported education. If people are going to think for themselves they need to be educated, which is why both supported education and starting schools.

0

4. How did John Calvin advance the Reformation? (3 points)

The main way John Calvin advanced the Reformation was through missions. He started a church in Geneva, Switzerland and from there his ideas spread to the Netherlands and other places nearby. This was the reason the Reformation reached certain places. He shared many ideas with Luther, but in some things he believed slightly different and then some people disagreed with some of what he said which pushed along the idea of denominations. And this, in turn, pushed and advanced the Reformation. add a little more depth -1/2

5. List two pillars of a Biblical philosophy of history. Then give an example from our Renaissance and Reformation unit of each of those pillars. (2 points)

True!
One pillar states that history has direction. This can be seen through Luther. It is not a coincidence that the movable printing press happened to be at the same time as the 95 theses and Luther wanting people reading the Bible for themselves. It is God controlling the direction of history that caused this timing. Another is that sin exists. This can be seen through the corruption of the church. Even God's church, a place where there should be no sin became corrupt and worldly. This shows how sin exists everywhere in the world even the church.
↳ How was it corrupt?

-1/2

Intermediate essays (Be sure to support your answers with as much specific content as possible)

1. How is this painting an excellent example of Renaissance art? (5 points)

It's excellent because not only is it an example of the style of art, but the content also describes aspects of the Renaissance.

✓ The style of it is a great example of Renaissance art. This painting shows Humanism. The focus of the painting is all of the influential thinkers of times past which goes with the idea that man can do great things. It also shows a lot of Greek and Roman, not only people but also architecture. This is because the Renaissance rebirthed Greek and Roman ideas. ^{↳ what type of architecture?}

✓ The content is also very Renaissance in a very similar way. It shows the idea of humanism and Greek and Roman ideas as stated above. It also shows the importance of learning. All of the people in this picture are either reading, writing or discussing and what is more they are in a school. This helps show the value and importance placed on education and schools during the Renaissance.

-1

-1 1/2

2. Author Eric Metaxas describe Luther as, "The man who created the future." Write an essay supporting this thesis. (10 points)

Luther is the main reason for the Christian religion as we know it today, and through that he has also influenced daily life.

Even though many of Luther's ideas were not completely original and he was not the first to oppose the Catholic Church, he was the first to successfully spread his ideas and make a change. Luther originally only wanted to change the church not break away, but since that didn't work out the split ended up causing all of the denominations we are familiar with today. The spread of Luther's ideas is what caused there to be Catholic, Protestant and eventually all the denominations under protestant. So, really he's the cause of Christianity as we know it.

He also ended up significantly shaping daily life as we know it. With his support of people thinking for themselves and being educated concerning religion, people began to wonder if it should not be the same in things like politics and science. This idea of freedom of thought caused significant changes in society and daily life. This also, sadly, led to people choosing to have no religion, though obviously Luther did not intend this. This Protestant movement also offered a new found separation between church and government.

Terrific
detriment

10
10
Even though it wasn't completely separate, it was definitely becoming more so than the Catholic Church used to be.

Even though the government still chose and controlled the religion it still gave a bit more of a sense of choice, which I believe is what would help develop later the separation between church and government.

So, really the Reformation effected nearly every aspect of life. So that is how Luther was "the man who created the future"

Test 5

Chemistry

Name: Oliver PayneDate: 10/25/23

Please answer the following questions in complete sentences.

1. Definitions

A. Polyatomic ion - a polyatomic ion is an ion with multiple atoms. (An ion is an atom with a positive/negative whole-number charge).

B. Nonpolar covalent bond - a nonpolar covalent bond is a bond where electrons are shared equally.

C. Polar covalent bond - a polar covalent bond is a bond where electrons are shared unequally.

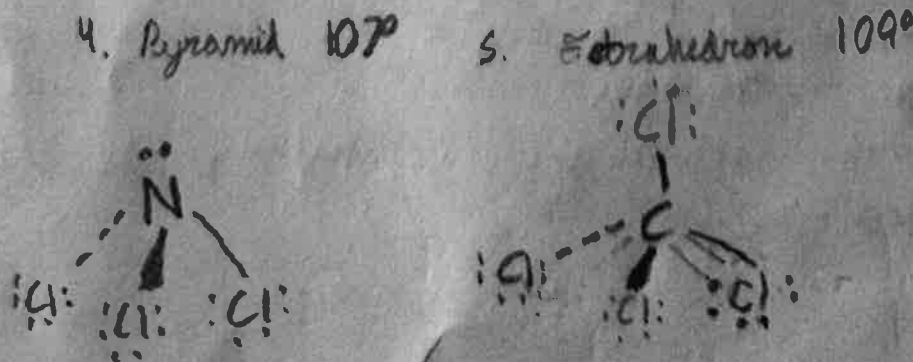
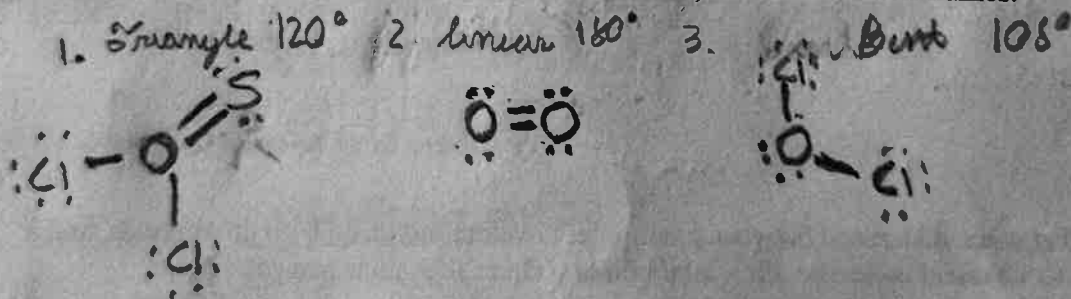
2. What is the difference between a nonpolar covalent molecule with polar bonds, and a polar covalent molecule with polar bonds? (Other than their names)

A nonpolar covalent molecule with polar bonds has the polar bonds spread equally in all directions, negating the charge of the bonds. A polar covalent molecule has polar bonds spread unevenly, making the charge unevenly distributed.

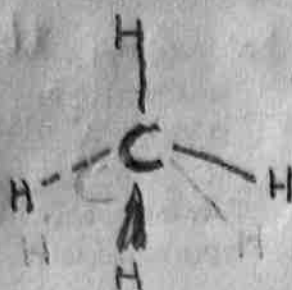
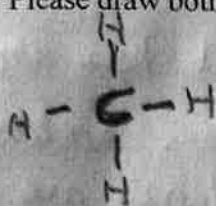
3. Please fill in the blanks in the table below. Include both ion subscripts (how many of each atom in the molecule), and the charge.

Ion name	Formula
Ammonium	NH_4^+
Hydroxide	OH^-
Nitrate	NO_3^{-2}
Sulfate	SO_4^{-2}
Carbonate	CO_3^{-2}
Phosphate	PO_4^{-3}
Acetate	$\text{C}_2\text{H}_3\text{O}_2^-$

4. Please draw the five main VSEPR structures below, and include their names.

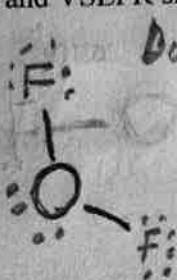


5. Please draw both the Lewis structure and VSEPR shape for the molecule CH_4



tetrahedron 109°

6. Please determine the Lewis structure and VSEPR shape for the molecule OF_2



bent 103°

7. Explain VSEPR theory in your own words.

Valence electrons will try to get as far away from one another that they can.

8. Explain the difference between polar and nonpolar covalent bonds.

Polar share electrons unevenly, nonpolar share evenly.

9. If 2 different atoms are bonded together with a nonpolar bond, what can we say about the electronegativities of the 2 atoms?

they are the same

10. Why does soap help wash away stains that water cannot wash away by itself?

It is so long that it has an ionic end and a nonpolar covalent end, so it can dissolve polarities and nonpolar molecules

11. Which atom is more electronegative, oxygen or calcium?

O

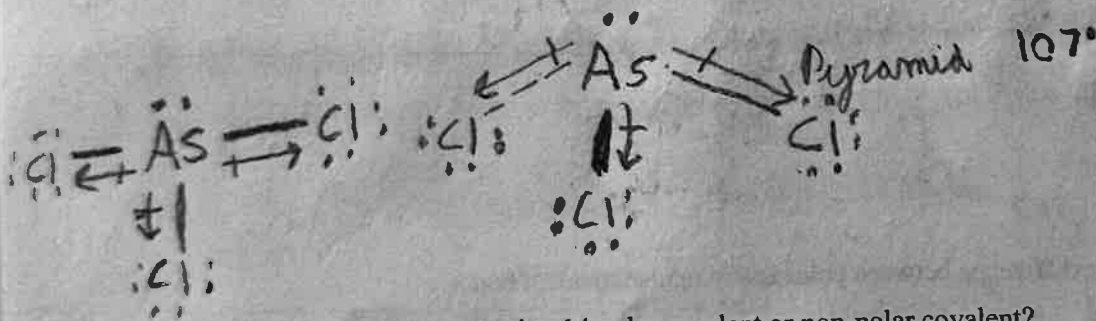
12. Will there be any polar bonds in the molecule O₂?

No

13. Will there be any polar bonds in the molecule O₃?

No

14. Please draw the Lewis structure and VSEPR shape of the molecule AsCl₃. Indicate any polar covalent bonds using the correct symbol.

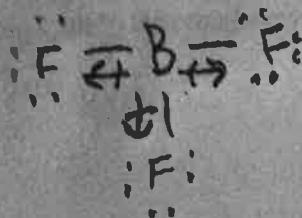
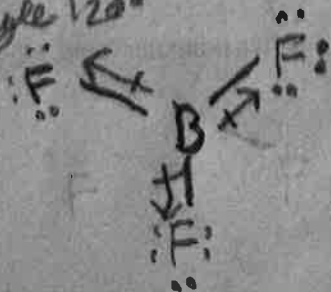


15. Is the molecule in question 14 polar covalent or non-polar covalent?

polar covalent

16. Please draw the Lewis structure and VSEPR shape of the molecule BF₃. Indicate any polar covalent bonds using the correct symbol.

triangle 120°



17. Is the molecule from question 16 polar covalent or non-polar covalent?

non-polar, (evenly distributed)

18. In this chapter we have discussed three main types of molecules: polar covalent, non-polar covalent, and ionic.

A. What types of molecules can a polar covalent solution dissolve?

polar covalent, ionic

B. What types of molecules can a non-polar covalent solution dissolve?

non-polar covalent

19. Give the chemical formulas for each of the following compounds in a reaction: Calcium nitrate reacts with sodium carbonate to produce solid calcium carbonate (chalk) and sodium nitrate.

Calcium Nitrate: $\text{Ca}(\text{NO}_3)_2$

Sodium Carbonate: Na_2CO_3

Calcium Carbonate: CaCO_3

Sodium Nitrate: NaNO_3

20. Classify each of the following molecules as ionic, polar covalent, or nonpolar covalent: MgCl_2 , CS_2 , H_2 , PCl_3 . Which of them would you expect to dissolve in water?

MgCl_2 - ionic

CS_2 - polar covalent

H_2 - nonpolar covalent

PCl_3 - ionic

MgCl_2 , PCl_3 , and CS_2 would dissolve in water

21. Give the chemical formulas for the following compounds:

a. lithium sulfite



b. ammonium phosphate



c. calcium carbonate



d. aluminum dichromate



22. Name the following compounds:

a. NH_4ClO_2

Ammonium chlorite

b. $\text{Mn}(\text{NO}_2)_2$

Manganese nitrite

c. $\text{Be}_3(\text{PO}_4)_2$

Beryllium phosphate

23. What determines the polarity of a molecule?

electronegativity

24. What factors affect the geometry of a molecule?

electronegativity
number of atoms
non bonded valence electrons
bonded valence electrons

$$\frac{26.5}{28} = 95$$

gradell

Pre-Calc:
Chapter 2 Quiz (2.1-2.5)

Name:

1. Sketch the graph of $f(x) = -x^2 + 2x + 8$ and state the following.

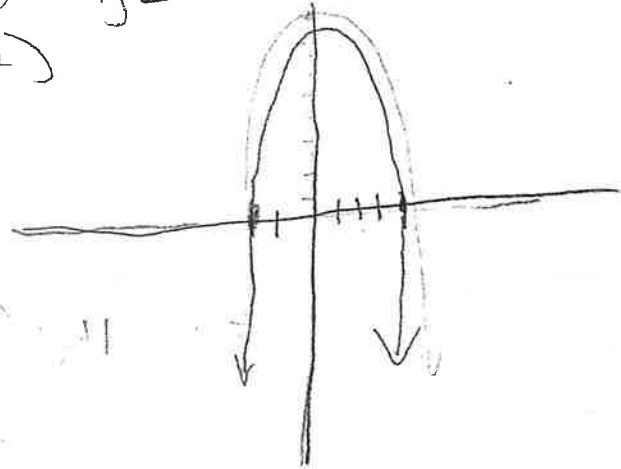
-1.5 Vertex (0) 9

$$-(x^2 - 2x - 8) \quad -1, 2$$

Axis of symmetry: $x=0$

$$-(x-4)(x+2)$$

X-intercepts: $-2, 4$



2. Describe the right-hand and left-hand behavior of the graph $f(x) = 3 - 2x^4$. (That is will it be going towards negative or positive infinity)

$$f(x) = -2x^4 + 3$$

it will be going towards negative ∞



3. Find all the real zeros of the function $f(x) = 2x^4 - 5x^3 + 2x^2$ and state their multiplicity.

$x = 0, 2, 1/2$
 ↑ even, 2
 ↑ odd, 1
 ↑ odd, 1

$$\begin{aligned} f(x) &= x^2(2x^2 - 5x + 2) \\ x &= x^2(2x^2 - 1x - 4x + 2) \\ &= x^2(x(2x-1) - 2(2x-1)) \\ &= x^2(x-2)(2x-1) \end{aligned}$$

P: 4, -1, -4
S: -5

4. Divide $(2x^5 - 3x^4 + 9x^2 - 7)$ by $(2x + 1)$

$$\begin{array}{r} 1x^4 - 2x^3 + 2 + 4x - 2 + \frac{-5}{2x+1} \\ 2x \overline{) 2x^5 - 3x^4 + 0x^3 + 9x^2 + 0x - 7} \\ \underline{+(2x^5 - x^4)} \\ 0 - 4x^4 + 0x^3 \\ \underline{+(+4x^4 - 2x^3)} \\ 0 + 2x^3 + 9x^2 \\ \underline{+(-2x^3 + x^2)} \\ 0 + 3x^2 + 9x^2 \\ \underline{+(+3x^2 - 1.5x)} \\ 0 + 4.5x^2 + 9x^2 \\ \underline{+(-4.5x^2 + 2.25x)} \\ 0 + 11.25x + 9x^2 \\ \underline{+(-11.25x + 5.625)} \\ 0 + 0 + 9x^2 - 1.375 \\ \underline{+(-9x^2 + 4.5x)} \\ 0 + 0 + 3.125x - 1.375 \\ \underline{+(-3.125x + 1.5625)} \\ 0 + 0 + 0 + 1.75 \\ \underline{+(-1.75x + 0.875)} \\ 0 + 0 + 0 + 0.875 \end{array}$$

5. Use the fact that $x = -1$ is a solution of the equation $x^3 + 3x^2 - 13x - 15 = 0$ to factor the polynomial completely.

$$\begin{array}{r|rrrr}
 -1 & 1 & 3 & -13 & -15 \\
 & \downarrow & -1 & -2 & +15 \\
 \hline
 & 1 & 2 & -15 & 0 \\
 & & & x^2 + 2x - 15 &
 \end{array}$$

$P: -15$
 $S: 2 \quad 5, -3$

$(x+1)(x-3)(x+5)$

Perform the operations and write in standard form.

6. $(9 - 6i) + (4 + i)$

$5 - 5i$

7. $(2 + 3i)(3 - 2i)$

$6 - 4i + 9i + 6$

$12 + 5i$

8. $11 - (8 + 5i) + 7i$

$11 - 8 - 5i + 7i$

$3 + 2i$

9. Find all the rational zeros of the function $f(x) = x^3 - x^2 - 14x + 24$

$\frac{24}{1 \pm 1, 2 \pm 2, 3 \pm 3, 4 \pm 4, 6 \pm 6, 8 \pm 8, 12 \pm 12}$
 $1 \rightarrow \pm 1$

$$\begin{array}{r|rrrr}
 -2 & 1 & -1 & -14 & 24 \\
 & \downarrow & 2 & 6 & -16 \\
 \hline
 & 1 & 1 & -8 & 8 \\
 & & & x^2 + x - 8 &
 \end{array}$$

$$\begin{array}{r|rrrr}
 3 & 1 & -1 & -14 & 24 \\
 & \downarrow & 3 & 6 & -24 \\
 \hline
 & 1 & 2 & -8 & 0 \\
 & & & x^2 + 2x - 8 &
 \end{array}$$

$(x-3)(x^2+2x-8)$
 $(x-3)(x+4)(x-2)$

$x = 3, -4, 2$

$$\begin{array}{r|rrrr}
 -3 & 1 & -1 & -14 & 24 \\
 & \downarrow & 3 & -12 & -76 \\
 \hline
 & 1 & 2 & -8 & 0 \\
 & & & x^2 + 2x - 8 &
 \end{array}$$

1. Name the three types of bone cells and describe their function. (10 pt)

A. osteoclast: breaks apart the bone. ✓

B. osteoblast: forms the bone matrix ✓

C. osteocyte: mature bone cell surrounded by bone matrix ✓

2. Why do osteocytes resemble spiders? What is it that gives them their "spider legs" and what is the function of these "spider legs"? (5 Pts)

They resemble spiders because the ^{processes} lamellae look like the legs (since they surround the osteocyte). They are what the osteocyte processes travel through in order to communicate with one another.

3. Explain how bone grows lengthwise. (Include epiphyseal plate, chondrocytes, lacuna, cartilage ossification, osteoblasts, and osteocytes in your answer.) (10 pt)

2 The osteoblasts form new bone cells and matrix, and turn into osteocytes. As the bone grows because of sex hormones, the inner layer of the epiphyseal plate undergoes cartilage ossification and turns into the bones lacuna as it fills with holes. (The epiphyseal plate also grows out but because it is also being changed into lacuna, it stays about the same size.)

4. Name two nutrients necessary for bone growth. (5 pt)

-2 A bone is made of calcium and protein.

5. Briefly describe plantar flexion and dorsiflexion? (5 pt)

Plantar flexion is the foot pointing down and dorsiflexion is the foot pointing up. ✓



6. Give a brief description of bone repair from once a bone has been broken and a hematoma has formed. (5 pt)

After the hematoma forms, the callus forms. The callus then ossifies. Then the connective bone is remodeled.

7. What happens to one's muscles if their blood calcium level significantly dropped? (5 pt)

5 The body will begin to break down bone in order to bring more calcium to the muscles. This is only if it cannot get enough calcium from ones diet.

8. How does one's parathyroid respond to low blood calcium levels? (Include PTH, osteoclast, and vitamin D in your answer). (10 pt)

-2 PTH is the abbreviation for parathyroid. The osteoclast will break down the bone in order to get calcium. (This happens in the parathyroid.) Vitamin D comes from the sun, and is what starts off this reaction.

↳ What happens in the parathyroid?

9. How does the body compensate and regulate a high blood calcium level? (Include thyroid gland, calcitonin, and kidneys in you answer.) (5 pt)

The body will stop producing more calcium. Calcium will be stored in the kidneys, and the calcitonin will remove excess calcium.

calcitonin effects the osteoblast

10. If too little growth hormone is left untreated in a child, what syndrome will the child develop and if it is detected in a child how is this problem treated? (5 pt)

It will lead to dwarfism. It is treated by injecting biath hormones into them.

11. Briefly describe anatomical position? (you may use a drawing, include a least five terms used to describe positioning of human anatomy) (5 pt)

Five terms of anatomical position are left, right, medial line, superior and inferior.

12. Name the three types of joints found in a human's body and give an example of each. (10 pt)

A. synovial is the main joint for movement. An example is your shoulder joint which is a ball and socket joint.

B. finger joints

C. backbone joints

13. What is the function of synovial fluid? (5 pt)?

(It is from the synovial gland) and its main function is to lubricate the joint.

What produces synovial fluid? synovial gland = Not quite

14. Name and give an example of two synovial joints found in the human body. (be sure to include the type of synovial joint and briefly describe its movement). (10 pt)

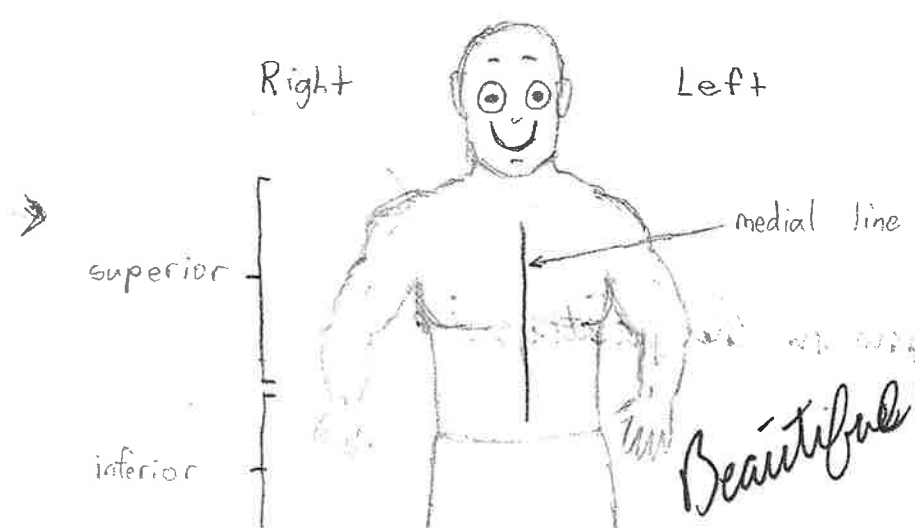
A. ball and socket: is the shoulder joint. Allows for circular movement and up and down and side to side. (also in the hip)

B. hinge joint: found in the elbow. Allows up and down motion.

Ball and socket.

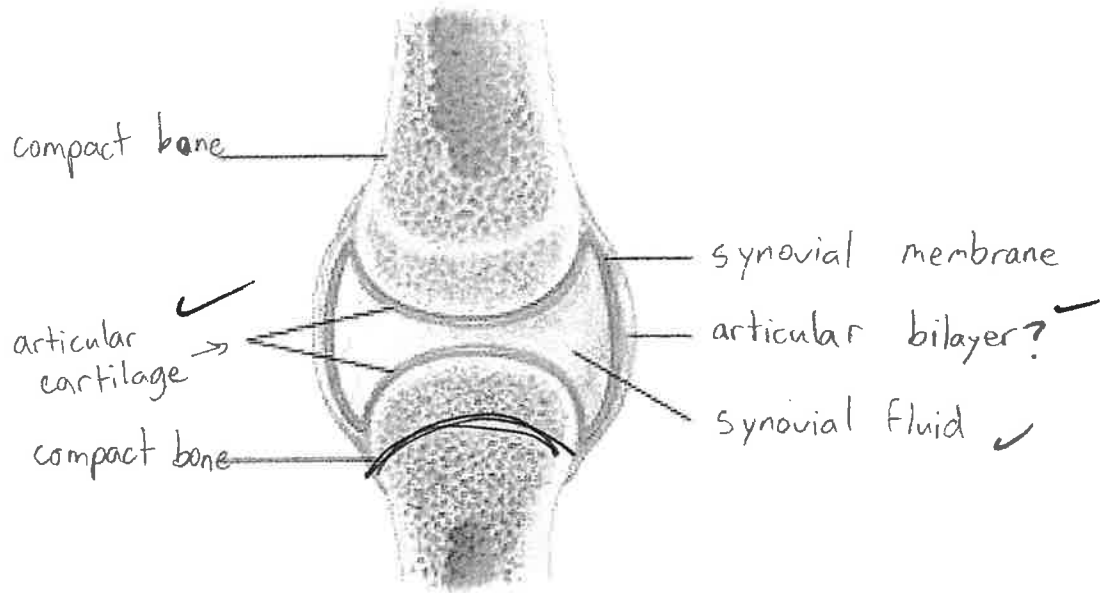


Hinge joint



Beautiful!

15. Label the parts of the synovial joint below. (5 pt)



Medieval History - Exam #1

Name, _____

87

Definitions:

Give 1-2 sentences to define the term.

1. *asceticism*
2. *Constantine*
3. *coenobitic*
4. *Vandals*
5. *Ambrose of Milan*

Essays:

Please answer the following essay prompts on separate sheets of paper. Each essay should contain 3-5 paragraphs. **DO NOT USE fluff introduction and conclusion paragraphs.** All writing must be single-spaced. Staple your essay pages to this document before turning it in.

1. Who is Diocletian? Explain why he is important to the history of *Rome* in his context. And then explain why he is important for this history of the *Church*. Be sure to give details, examples, etc. to support your reasoning.
2. Why does Rome become "Christian"?
3. Who are the "barbarians"? Explain the historical relationship between barbarians and Rome. Why are they necessary for understanding the fall of Rome?
4. What is the relationship between persecution and Christian monasticism in Rome? Why do some Christians become monks during persecution? Why do some become monks after persecution? Give examples to support your answer.

-4 X asceticism is the belief that monks should leave all worldly desires in order to be more holy.

✓ Constantine was Rome's first Christian Emperor who made Constantinople the capital

✓ This is where monks live together.

-1 ~~AV~~ 4 There were violent groups of Germanic tribes that banded together and invaded Rome.

~~AV~~ 3 Ambrose of Milan was an important church / monks model and supporter.

20 1 Diocletian was the emperor who made the tetrarchy, which gave Rome 4 rulers. He believed that old Rome was better and that they needed to return to that belief. He appointed himself and Maximian as the augusti, or highest rulers, and Constantine and Galerius as caesars. He called himself "Dominus et Deus".

Diocletian and the other three rulers were divided by east and west. Together they brought back many Roman traditions like pagan worship. In 305 He and Maximian resigned and let others take over.

Along with bringing back paganism, Diocletian grew a hatred for Christians. He ordered that churches and Bibles be burned and Christians to be killed. This was more strict in the East because that was where Diocletian ruled over. In a way though, his tetrarchy helped Constantine's son, Constantine, rise to power.

and became a Christian leader which brought a new Christian Rome.

18 2 Constantine was a major reason as to why. He had a dramatic conversion when he saw a vision of X in the sky. He then used that symbol to bring Rome to Christianity when he became Augustus.

Constantine hated pagan worship and the lack of morals. He outlawed gladiator fights and pagan holy days. One of the biggest things he did was making Constantinople Rome's capital. He thought that Rome's pagan roots in society were bad and he decided that starting in a place without those would further promote Christianity.

The rise in monasticism also brought many to Christianity and pilgrimages from Rome. Later, another emperor, Theodosius would also promote Christianity. Theodosius was also a major figure in the Nicene Creed.

made official religion

17 3 Barbarians were anyone who was outside of Rome. The name "barbarians" means "nonsense" and the Roman people thought that they were crazy. Over time though the Romans had conquered and accumulated many of these Germanic Barbarians.

By the 3rd century, these people were a huge part of the population. This caused some significant problems such as the fact that Rome's armies were filled with people who only wanted money but did not care about Rome at all. Eventually, Roman leaders gave out citizenships to everyone which gave more taxpayers, but the value of being a

they were inside too
campaign

Atiyon was lost.

Later, these Germanic tribes started banding together. The Visigoths, led by Alaric, wandered and sacked Rome for three days by crossing over the Rhine. In 476, the empire finally fell to Barbarians and Romulus Augustus was the last emperor.

2^o 4. During persecution, many Christians fled Rome and found themselves in deserted areas. This allowed them to have plenty of space and time to meditate on God. They also could be at peace to worship and not be persecuted since they were far from society.

This way of living in solitude was exemplified by St. Anthony who spent his time alone and waited for people to bring him food. He meditated and fasted and kept vigils and lived a very ascetic life. The life of Anthony, his biography, inspired many including Augustine of Hippo.

After persecution ended people wanted a way to express their faith since they were not being martyred anymore. They were inspired by the monks like Anthony and followed his example and began to live ascetic lives. Many took pilgrimages to Egypt to see holy relics, and to give veneration to monks, and to learn how to be monks.

This led to many aristocratic people giving up their wealth in order to help the poor and build monasteries. In many cases such as Honoratus, who founded a very influential monastery in Lyons, and Sulpicius Severus, who wrote about Martin of Tours, being an aristocratic monk went very well. In others, such as Priscillian, who was deemed a heretic and

was executed with his followers, it did not.

Many monks like Augustine and John Cassian wrote ✓
rules and instructions on how people should be monks
and how monasteries should work. This gave more
clear lines for the future.

Medieval Literature - Exam #1

Name

96

Please answer the five following essay prompts on separate sheets of paper. Each essay should contain 3-5 paragraphs. DO NOT USE fluff introduction and conclusion paragraphs. All writing must be single-spaced. Staple your essay pages to this document before turning it in.

1. The phrase “Pæt wæs god cyning” (“That was one good king”) appears three times in Beowulf. First it is used to comment on Shield Sheafson (line 11), then Hrothgar (line 862), and finally Beowulf (line 2391). Interpret this phrase in light of the entire narrative. Give evidence for your interpretation from the text.
2. The motif of “feud” appears continually throughout Beowulf. Explain what the motif is, how it is used throughout the text, and why it is used.
3. What is a dragon? Why do both dragons in Beowulf sit on piles of gold? Put yourself in the shoes of the poet, why use dragons?
4. Who is Beowulf? Explain and defend your answer.
5. Write your own exam question and answer it. You will be graded on both the question and the answer. Tread lightly. You must ask a question worthy of being dealt with on an exam by all readers of Beowulf.

1) The author uses the phrase "that was one good king" to show how some kings were better and different than the others. The first time he says it is about Shield Sheafson. He talks about how Shield was a warrior and conqueror. By calling him a good king, the author is saying that one of the attributes of a good king is being able to protect your people from other countries.

The next time the phrase is used is in relation to Hrothgar. The author talks about how Hrothgar paid other's wergild's. This means that if someone killed another person and then couldn't pay off the family, he would pay them off for them. This helped to end feuding, which the author is telling us is an attribute of a good king.

Lastly, the phrase is used to describe Beowulf. When the author talks about Beowulf's reign he claims that made him a good king. He tells us about how Beowulf ended feuds and protected his people during his reign. These are both of the attributes attributed to Shield Sheafson and Hrothgar. So, Beowulf is doing both things, which makes him the best king.

Interestingly, the attributes that the author is praising as belonging to a good king are attributes of Christ. It is as if all humanity was in a feud with God, but couldn't pay the wergild, so Christ stepped in to pay for us.

sure, but it precisely the opposite. These attributes are at "good" kings.

2) Feuding was a big part of non-evangelized medieval societies. In those societies if you killed someone, their family was going to hunt you down and kill you. Unless, you paid them a set (very expensive) sum. This type of fighting could go on and on endlessly, because there were always more people to take vengeance. The author talks about feuds a lot and even brings up kin-killing, which is killing your own family.

The motif of feuding and kin-killing is used to describe people's characters.

The author introduced characters by giving information about the feuds they were involved in and what family they'd killed. Feuding is also used to foreshadow. We know from the text that Hrothgar's mead hall will eventually burn because of feuds.

The idea of a feud, in this book, is used to represent internal struggles in a country. These struggles can be gotten rid of with a good king. However, for a non-evangelized people, the feuding will eventually return.

3) For medieval people, dragons were smaller. They thought of dragons as being more snake-like. They still thought they could fly, but they were like snakes with wings and legs that could breath fire.

They also believed that dragons liked to collect shiny things. They believed dragons would hid treasure and then protect it in their

burrows. So, both dragons in Beowulf are representing greed.

A dragon was a good choice for the poet because he wanted to represent evil. Dragons looked like snakes, which would bring to mind the devil in the garden. This made the dragon perfect for showing what evil looked like. Since dragons are also greedy, it was the perfect addition to make the dragon seem even more evil.

4) Beowulf is the hero of the story. He helps the Danes when they are being attacked by a terrible monster named Grendel. When Grendel's mother takes revenge, he also kills her. He eventually becomes king of the Geats, and has to kill a dragon that is attacking his people. In doing this he kills the dragon, but is wounded and dies. He is said to have the strength of thirty men in each hand.

In the book, he represents what a good king and leader should look like. He protects his people from both outside attacks like war, and inside attacks like greed and killing. The author is trying to show what a strong king should be like in caring for his people. He is showing how war and greed can be avoided when there is a good king.

Beowulf is the best character in the book. He is the most level-headed and humble. He protects and helps people purely to help them. The Danes aren't even his own people, but he still

wants to help them when he hears about Grendel. The author has set him up to be a very good king. He then tells us about his rule. Beowulf spends his reign protecting his people and dealing with Grendel. This shows what a good leader he ends up being. He is different than what past leaders had been like.

5) Question: What is the symbolism behind Grendel? What about the dragon? What is the author trying to say about the Geats when Beowulf dies?

Grendel is a representation of greed or treachery. Grendel and the Dames are in a many year feud. Grendel is not paying any type of wergild. He is simply killing off as many Dames as he can.

The dragon represents greed and war. The dragon is an outer threat is coming to hurt the people. This is similar to what happens in war.

When Beowulf fights off these two creatures, it represents what a good leader does. A good leader gets rid of greed and war. A good leader or king is supposed to protect their people from threats, and that's what Beowulf does. However, when Beowulf dies, the Geats are under threat of being attacked again. The Dames are threatened to have another feud. The author is trying to show what happens to a country that doesn't know

God. He is telling us that in an unevangelized country there is fighting and sending. A good king may be able to pause these fights and send. However, when they die, the fighting will return. He is saying that a country needs to know God in order to put a fully complete stop to fighting.

good!

$$\frac{26.5}{27} = (98)$$

Name: _____

grade 12

Consider the following graph for questions 1-7:

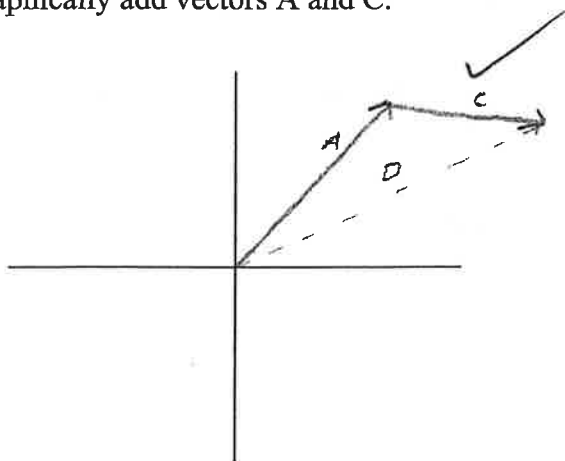
1. Which has the largest magnitude? *A ✓*

2. Which has the largest angle? *C ✓*

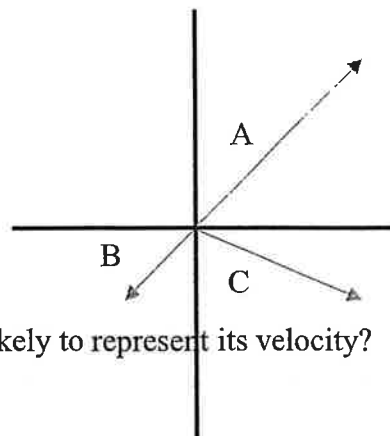
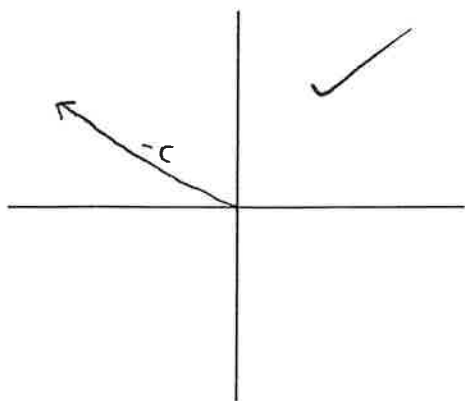
3. If an airplane is travelling southeast, which vector would be the most likely to represent its velocity? *C ✓*

4. If A is the acceleration of an object, and B is its velocity, would the object be speeding up or slowing down? *Slowing down ✓*

5. Graphically add vectors A and C.

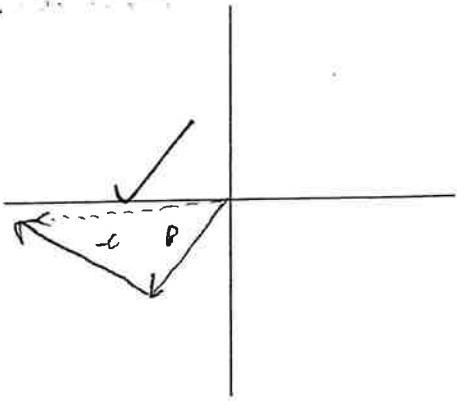


6. Draw the vector that would represent $-C$.



7. Graphically subtract vector C from vector B.

$B - C$



8. What is the point of adding vectors graphically when we can do so analytically?

Sometimes it is easier if we can see the vectors, rather than just the quantities

Please solve the following problems.

$$A = \sqrt{A_x^2 + A_y^2}$$

$$\theta = \tan^{-1}\left(\frac{A_y}{A_x}\right)$$

$$A_x = A \cdot \cos \theta$$

$$A_y = A \cdot \sin \theta$$

9. Vector A has a magnitude of 3.2m and a direction of 15 degrees. What are its x and y components?

$$M = 3.2\text{m}$$

$$\theta = 15^\circ$$

$$A_x = 3.2\text{m} \cdot \cos 15 = 3.09\text{m}$$

$$A_y = 3.2\text{m} \cdot \sin 15 = 0.83\text{m}$$

10. The velocity vector of a bike has an x-component of 1.7m/sec and a y-component of -1.1m/sec. What are the magnitude and direction of the velocity vector?

$$A_x = 1.7\text{m/sec}$$

$$A_y = -1.1\text{m/sec}$$

$$\sqrt{(1.7)^2 + (-1.1)^2} = M = 2.02\text{m/sec}$$

$$\theta = \tan^{-1}\left(\frac{-1.1\text{m/sec}}{1.7\text{m/sec}}\right) = -32.91 + 360 = 327.09^\circ$$



0

11. Vector A has a magnitude of 31.1 m at an angle of 60.0 degrees, and vector B has a magnitude of 11.4 m at an angle of 290.0 degrees. What is the sum of these two vectors? (Answer should have magnitude and direction.)

$$A_x = 31.1 \text{ m} \cdot \cos 60 = 15.55 \text{ m} \quad B_x = 11.4 \text{ m} \cdot \cos 290 = 8.4 \text{ m} \quad C_x = 19.45 \text{ m}$$

$$A_y = 31.1 \text{ m} \cdot \sin 60 = 26.93 \text{ m} \quad B_y = 11.4 \text{ m} \cdot \sin 290 = -10.71 \text{ m} \quad C_y = 19.22 \text{ m}$$

-1/2

Should be a b.
which then changes some of the other values

$$\sqrt{(19.45)^2 + (19.22)^2} = M$$

$$M = 27.34 \text{ m}$$

$$\theta = \tan^{-1}\left(\frac{19.22}{19.45}\right) = 45.66^\circ$$

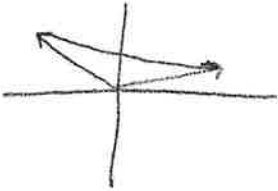
12. A hiker walks 1.8 miles with a heading of 150.0 degrees and then 3.2 miles at a heading of 350.0 degrees. What is the scout's final displacement relative to his starting point?

$$A_x = 1.8 \cdot \cos 150 = -1.56 \text{ mi} \quad B_x = 3.2 \text{ mi} \cdot \cos 350 = 2.15 \text{ mi} \quad C_x = 1.59 \text{ mi}$$

$$A_y = 1.8 \cdot \sin 150 = 0.9 \text{ mi} \quad B_y = 3.2 \text{ mi} \cdot \sin 350 = -0.56 \text{ mi} \quad C_y = 0.34 \text{ mi}$$

$$M = 1.63 \text{ mi}$$

$$\theta = 121.07^\circ$$



13. A boat travels across a wide river. If the boat can travel at a speed of 15 mph and its pilot heads in a direction of 130.0 degrees (while the current's velocity is 2.1 mph at a heading of 200.0 degrees) what will be the final velocity of the boat?

$$A_x = 15 \text{ mph} \cdot \cos 130 = -9.64 \text{ mph} \quad B_x = 2.1 \cdot \cos 200 = -1.97 \text{ mph}$$

$$A_y = 15 \cdot \sin 130 = 11.49 \text{ mph} \quad B_y = 2.1 \cdot \sin 200 = -0.72 \text{ mph}$$

$$C_x = -11.61 \text{ mph}$$

$$C_y = 10.77 \text{ mph}$$

$$M = \sqrt{C_x^2 + C_y^2} = 15.84 \text{ mph}$$

$$\theta = 137.15^\circ$$

-1/2

14. A plane heads due north ($\theta = 90.0^\circ$) at a speed of 200.0 mph. If the wind's velocity is southeast (315°) at 15.0 mph, what will be the actual velocity of the plane?

$$A_x = 200 \cdot \cos 90 = 0 \quad B_x = 15 \cdot \cos 315 = 10.61$$

$$A_y = 200 \cdot \sin 90 = 200 \quad B_y = 15 \cdot \sin 315 = -10.61$$

$$C_x = 10.61 \text{ mph}$$

$$C_y = 189.39 \text{ mph}$$

$$M = 189.69 \text{ mph}$$

$$\theta = 86.79^\circ$$

15. Determine the sum of these two vectors: $A = 28.9 \text{ m}$ at 165° , $B = 34.6 \text{ m}$ at 305° .

$$A_x = 28.9 \text{ m} \cdot \cos 165 = -27.92 \text{ m} \quad B_x = 34.6 \cdot \cos 305 = 19.85 \text{ m}$$

$$A_y = 28.9 \text{ m} \cdot \sin 165 = 7.48 \text{ m} \quad B_y = 34.6 \sin 305 = -28.34 \text{ m}$$

$$C_x = -8.07 \text{ m}$$

$$C_y = -20.86 \text{ m}$$

$$M = 22.37 \text{ m}$$

$$\theta = 248.85^\circ$$

p