

## 2011-8th Grade Fall Semester Exam Study Guide

### Multiple Choice

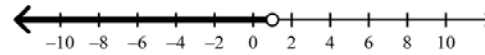
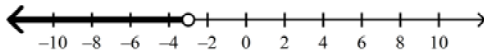
Identify the choice that best completes the statement or answers the question.

1. Solve and graph.

$$n - 8 + 3n < -4$$

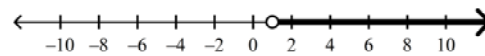
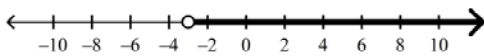
A.  $n < -3$

C.  $n < 1$



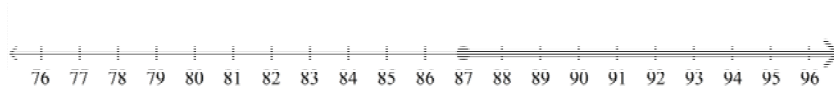
B.  $n > -3$

D.  $n > 1$



2. Maggie needs to earn a score of at least 87 on the final exam in social studies in order to earn an A for the quarter. This situation can be modeled by the following graph.

**Final Exam Score Needed to Earn an A**



Write an inequality to model this situation.

A.  $g > 87$

C.  $g < 87$

B.  $g \leq 87$

D.  $g \geq 87$

3. After a warm front pushed through the atmosphere, the temperature increased by  $12^{\circ}\text{F}$  yesterday afternoon. However, even after this increase, the temperature still did not exceed the average daily high temperature of  $84^{\circ}\text{F}$ . This situation can be modeled by the inequality  $t + 12 \leq 84$ , where  $t$  represents the temperature before the warm front pushed through the area. Which of the following could be the original temperature,  $t$ ?

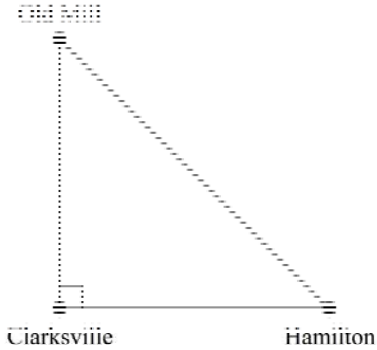
A.  $70^{\circ}\text{F}$

B.  $73^{\circ}\text{F}$

C.  $76^{\circ}\text{F}$

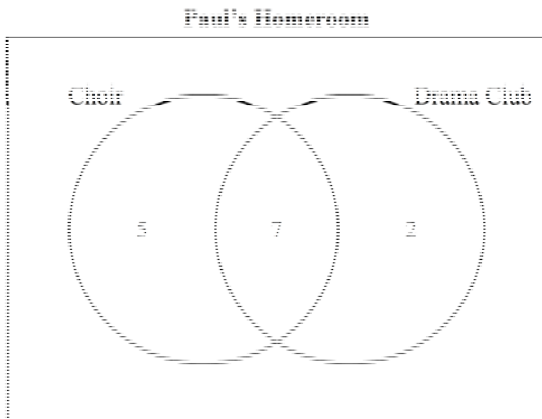
D.  $82^{\circ}\text{F}$

4. April works as a courier delivering and picking up packages for a shipping company. Three of the communities on her route form an isosceles right triangle as shown in the figure. There are approximately 58 miles between Old Mill and Clarksville and between Clarksville and Hamilton. Approximately how many miles are there between Old Mill and Hamilton? Round your answer to the nearest mile if necessary.



- A. 98 miles
- B. 86 miles
- C. 52 miles
- D. 82 miles

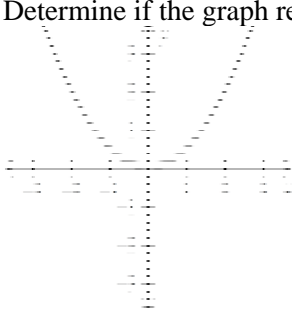
The Venn diagram below shows the number of students in Paul’s homeroom who sing in the school choir or act in the drama club.



5. According to the diagram above, how many students sing in the choir and act in the drama club?
- A. 12
  - B. 9
  - C. 7
  - D. 2

6. Refer to the information above. If there are 25 students in the homeroom, how many of them neither sing in the school choir nor act in the drama club?
- A. 20  
B. 11  
C. 17  
D. 14

7. Determine if the graph represents a function.



- A. The relationship is not a function.      B. The relationship is a function.

8. The Dakotas rented a minivan for their family vacation. When they returned from vacation, the total bill for the van was \$575. The standard weekly rate from the rental company is \$355 plus \$55 for each additional day of usage. How many additional days did the Dakotas have the minivan?
- A. 5 days  
B. 6 days  
C. 3 days  
D. 4 days

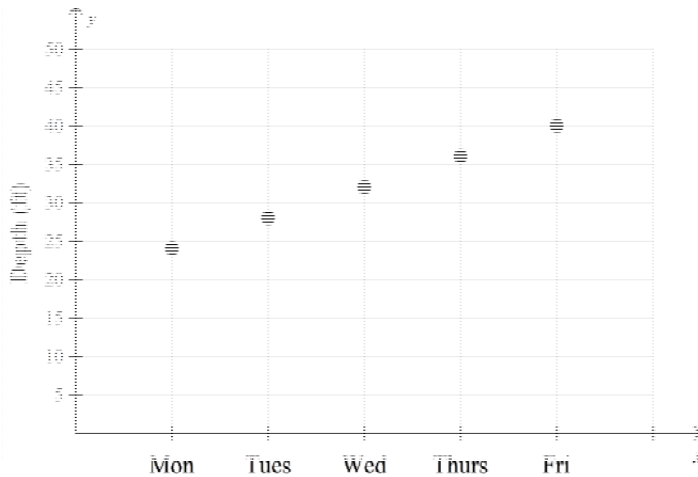
9. Molly has a \$80 gift certificate to an electronics store. She wants to use the gift certificate to purchase some CDs that cost \$10.99 each. Solve the inequality  $10.99n \leq 80$  to find the greatest number,  $n$ , of CDs that she can buy with the gift certificate.
- A. 5  
B. 8  
C. 7  
D. 10

10. A weather balloon was released from an altitude of 1,050 feet above sea level and began to ascend at a constant rate of 60 feet per minute as shown in the table. If the balloon continues to ascend at this rate, how many minutes will it take for it to reach an altitude of 1,710 feet above sea level?

<b>Time (minutes)</b>	0	1	2	3	4
<b>Altitude (feet)</b>	1,050	1,110	1,170	1,230	1,290

- A. 13 minutes  
B. 28 minutes  
C. 8 minutes  
D. 11 minutes

11. The graph below shows the depth of a river after several days of heavy rain. Which term best describes the rate of change?

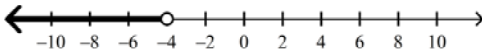


- A. an inverse variation  
 B. a direct variation  
 C. nonlinear  
 D. linear

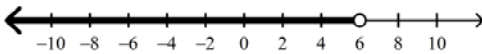
12. Solve and graph.

$$2a - 10 < 2$$

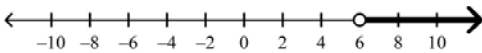
- A.  $a < -4$



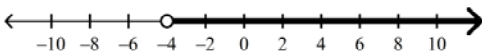
- B.  $a < 6$



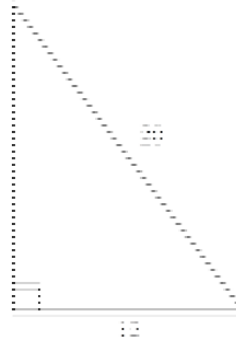
- C.  $a > 6$



- D.  $a > -4$



13. The hypotenuse of a right triangle is 20 units long. One leg of the triangle is 12 units long as shown in the figure. What is the length of the other leg?



- A. 16.6 units  
 B. 20 units  
 C. 16 units  
 D. 23 units

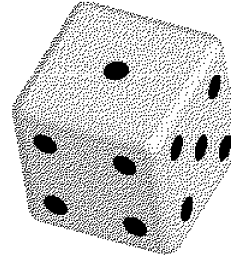
14. Miguel borrowed 2 books from the library each month for  $m$  months in a row. What expression can be used to find the number of books he borrowed from the library during this time period? Evaluate the expression if  $m = 6$  months.
- A.  $2 + m$ ; 8 books
  - B.  $2m$ ; 12 books
  - C.  $6m$ ; 12 books
  - D.  $6 + m$ ; 12 books
15. A certain bank charges its customers \$2.00 each time they use an automatic teller machine that is not owned by the bank. The bank is charged \$1.50 each time one of its customers uses a machine that is not owned by the bank. If  $x$  represents the number of out-of-bank automatic teller machine transactions that take place each month, what expression could be used to find the bank's profit?
- A.  $(2.00 - 1.50)x$
  - B.  $1.50x$
  - C.  $2.00 - 1.50x$
  - D.  $2.00x - 1.50$
16. Coach Quatman is able to take up to 20 players with her to a summer camp. If there are currently 9 players signed up to attend the camp, which of the following inequalities can be used to determine how many more players can attend the camp? Let  $p$  represent the number of players who can still sign up for the camp.
- A.  $p + 9 < 20$
  - B.  $p + 9 \leq 20$
  - C.  $p + 9 > 20$
  - D.  $p + 20 \leq 9$
17. Regina is 5 years older than her dog, and the sum of their ages is 19 years. If  $a$  represents Regina's age, in years, then the equation  $(a - 5) + a = 19$  can be used to solve for the ages. Use the equation to determine how old Regina is.
- A. 8
  - B. 12
  - C. 14
  - D. 7
18. In the second game of the basketball season, Julia scored 6 points fewer than three times the number of points she scored in the first game. Let  $p$  represent the number of points that she scored in the first game. Write an expression that can be used to find the number of points scored in the second game.
- A.  $6p - 3$
  - B.  $3p - 6$
  - C.  $3p - 6p$
  - D.  $3p + 6$
19. An architect uses the Pythagorean theorem to determine that the length of a beam is  $9\sqrt{5}$  feet long. Between which two consecutive integers does  $9\sqrt{5}$  lie on a number line?
- A. 23 and 24
  - B. 21 and 22
  - C. 20 and 21
  - D. 19 and 20
20. Find the next three terms in the arithmetic sequence 52, 45, 38, ...
- A. 31, 24, 17
  - B. 30, 22, 14
  - C. 32, 26, 20
  - D. 24, 10, -4
21. A square room has a tiled floor with 81 square tiles. How many tiles are along an edge of the room?
- A. 9 tiles
  - B. 11 tiles
  - C. 40 tiles
  - D. 20 tiles

22. A jar contains 8 quarters, 5 dimes, 7 nickels, and 4 pennies. If a coin is selected at random from the jar, what is the probability of selecting a quarter?



- A.  $\frac{1}{3}$   
 B.  $\frac{2}{5}$   
 C.  $\frac{7}{24}$   
 D.  $\frac{8}{25}$

23. If you roll a six-sided number cube that is numbered from 1 to 6, what is the probability of rolling a 4?



- A.  $\frac{1}{8}$   
 B.  $\frac{1}{6}$   
 C.  $\frac{1}{3}$   
 D.  $\frac{1}{7}$

24. A deli offers its customers the different choices of bread, meat, and toppings as shown on the menu below. If Matt orders a sandwich with one type of bread, one type of meat, and one topping at random, what is the probability that it will be white bread, with turkey and tomato?

Deli Menu		
Bread	Meat	Toppings
White	Ham	Cheese
Wheat	Turkey	Lettuce
	Roast Beef	Tomato
		Onions
		Pickles

- A.  $\frac{1}{60}$   
 B.  $\frac{1}{30}$   
 C.  $\frac{1}{15}$   
 D.  $\frac{1}{90}$

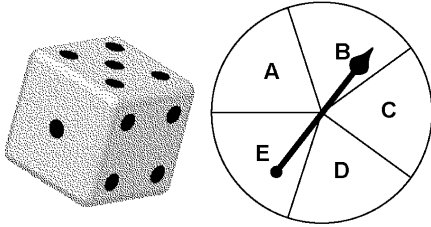
25. Lucy is one of 7 runners competing in the 100-yard dash at a track meet. If each runner is equally likely to win the race, what is the probability that Lucy will **not** win the race?

- A.  $\frac{2}{7}$   
 B.  $\frac{6}{7}$   
 C.  $\frac{1}{7}$   
 D.  $\frac{5}{7}$

Name: \_\_\_\_\_

ID: A

26. Suppose a number cube labeled from 1 to 6 is rolled and the spinner below is spun one time. What is the probability of rolling a number less than 4 and spinning a B?



- A.  $\frac{1}{10}$
- B.  $\frac{1}{20}$
- C.  $\frac{1}{5}$
- D.  $\frac{1}{15}$

**2011-8th Grade Fall Semester Exam Study Guide  
Answer Section****MULTIPLE CHOICE**

- |            |                |
|------------|----------------|
| 1. ANS: C  | STA: M8A2.c    |
| 2. ANS: D  | STA: 8: M8A2.a |
| 3. ANS: A  | STA: 8: M8A2.b |
| 4. ANS: D  | STA: 8: M8G2.a |
| 5. ANS: C  | STA: 8: M8D1.a |
| 6. ANS: B  | STA: 8: M8D1.a |
| 7. ANS: B  | STA: M8A3.c    |
| 8. ANS: D  | STA: 8: M8A1.c |
| 9. ANS: C  | STA: 8: M8A2.b |
| 10. ANS: D | STA: 8: M8A1.d |
| 11. ANS: D | STA: 8: M8A3.h |
| 12. ANS: B | STA: M8A2.c    |
| 13. ANS: C | STA: 8: M8G2.a |
| 14. ANS: B | STA: 8: M8A1.d |
| 15. ANS: A | STA: 8: M8A1.a |
| 16. ANS: B | STA: 8: M8A2.a |
| 17. ANS: B | STA: 8: M8A1.c |
| 18. ANS: B | STA: 8: M8A1.a |
| 19. ANS: C | STA: 8: M8N1.c |
| 20. ANS: A | STA: M8A3.f    |
| 21. ANS: A | STA: M8N1.b    |
| 22. ANS: A | STA: 8: M8D3.a |
| 23. ANS: B | STA: 8: M8D3.a |
| 24. ANS: B | STA: 8: M8D3.b |
| 25. ANS: B | STA: 8: M8D3.a |
| 26. ANS: A | STA: 8: M8D3.b |