

"If you tell the truth, you don't have to remember anything." - Mark Twain

## Algebra CMP2 Final Exam Reivew B (2014)

**Multiple Choice:** Identify the choice that best completes the statement or answers the question.

\_\_\_\_\_ 1. What does  $4x^2 - 64$  look like when it is in its completely factored form?

A.  $(4x + 4)(x - 16)$

B.  $4(x - 4)(x + 4)$

\_\_\_\_\_ 2. The side of a square is  $n$  inches long. The area of the square is 25 square inches. Which of the following equations can be used to find the side of the square?

A.  $n^2 = 25$

B.  $n = 25^2$

\_\_\_\_\_ 3. Which of the following equations best represents the data in the table?

$x$	$y$
-2	-1
-1	2
0	3
1	2
2	-1

A.  $y = x^2 + 3$

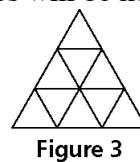
B.  $y = -x^2 + 3$

\_\_\_\_\_ 4. At what points does the graph of  $f(x) = 2x^2 - 4x - 16$  intersect the  $x$ -axis?

A.  $(-4, 0)$  and  $(2, 0)$

B.  $(-2, 0)$ , and  $(4, 0)$

\_\_\_\_\_ 5. If the pattern below continues, how many small triangles will be needed to make Figure 5?



A. 25

B. 30

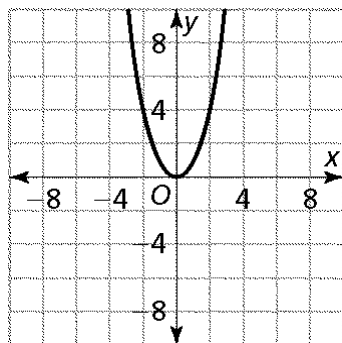
6. Macy plays on a summer softball team in a league that has  $t$  teams. Each team plays all the other teams twice and 5 teams that are not in their league. The total number of games that Macy's team will play is given by the function,  $g = t^2 - t + 5$ . If Macy's team is to play 61 games this season, how many teams are in her team's league?

A. 8

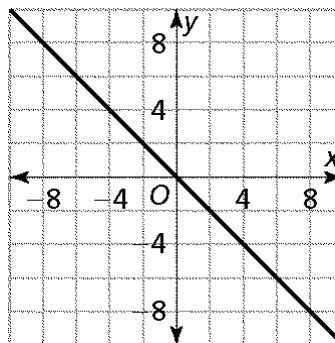
B. 5

7. Which of the following graphs is best described by  $y = x^2$ ?

A.



B.



8. Which of these is another way to write  $2^6$ ?

A.  $2 \times 2 \times 2 \times 2 \times 2 \times 2$

B.  $2 \times 6$

9. What does  $3^2 + (-5)$  equal?

A. 11

B. 4

10. Dominic's father is a scientist who works with radioactive substances. He had a 512-gram sample of one substance, which decays every hour. Dominic's father monitored the sample every hour to determine how much radioactive material remained. The following chart shows his observations. How much would be expected after 5 hours?

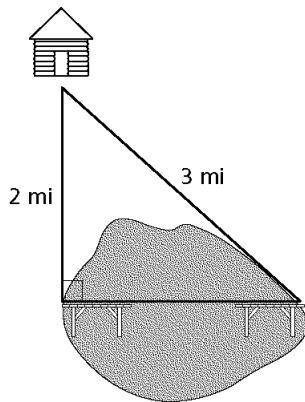
Time (hours)	0	1	2	3	4	5
Mass (grams)	512	256	128	64	32	

A. 8 g

B. 16 g

- \_\_\_\_\_ 11. What is the equivalent to  $\frac{b^6}{b^2}$ ?
- A.  $b^4$  B.  $b^{12}$
- \_\_\_\_\_ 12. If  $2^4 = 16$  and  $2^2 = 4$ ,  $2^0 = 1$ , and  $2^{-2} = \frac{1}{4}$ , what does  $2^{-4}$  equal?
- A.  $\frac{1}{32}$  B.  $\frac{1}{16}$
- \_\_\_\_\_ 13. What is another way to write  $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$ ?
- A.  $4^8$  B.  $4^7$
- \_\_\_\_\_ 14. What is equivalent to  $(xy)^{-4}$ ?
- A.  $\frac{1}{x^{-4}y^{-4}}$  B.  $\frac{1}{x^4y^4}$
- \_\_\_\_\_ 15. Without using a calculator, choose the number that could be a representation of  $\sqrt{28}$  on a calculator.
- A. 4.1231056 B. 5.2915026

- \_\_\_\_\_ 16. A surveyor determined the distance between two docks on opposite sides of a lake. Which is the closest estimate of the distance between the two docks?

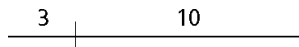


A. 2.3 miles

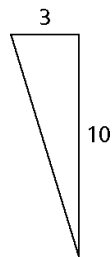
B. 2 miles

- \_\_\_\_\_ 17. Which one of the diagrams below could be used to solve the following problem: Justine rides her bike 3 miles to the east and then 10 miles to the south. How far is she from her starting point?

A.



B.

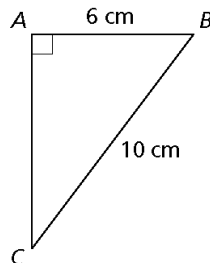


- \_\_\_\_\_ 18. Between what two consecutive whole numbers does  $\sqrt{42}$  lie?

A. 4 and 5

B. 6 and 7

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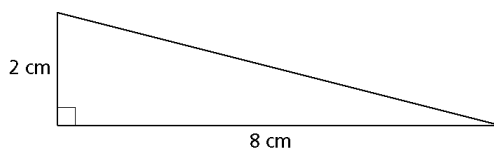


- A. 8 cm                      B. 11.66 cm

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- A. 2.2 ft                      B. 1.3 ft

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- A.  $8 - 2$                       B.  $\sqrt{2^2 + 8^2}$

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- A. They intersect at no points.                      B. They are really the same line.

\_\_\_\_\_ 23. Which equation has a slope of  $-2$  and passes through the point  $(5, 0)$ ?

A.  $y = -2x + 10$

B.  $y = 2x + 10$

\_\_\_\_\_ 24. What is the slope of the line that passes through the points  $(0, 3)$  and  $(8, 4)$ ?

A.  $8$

B.  $\frac{1}{8}$

\_\_\_\_\_ 25. What is the equation of the line that passes through the points  $(1, -1)$  and  $(3, -7)$ ?

A.  $y = -3x + 2$

B.  $y = -3x + 1$

\_\_\_\_\_ 26. Which of the following is *not* enough information to find the equation of a line?

A. The equation of a parallel line

B. The slope and y-intercept

Use the inverse relation  $y = \frac{600}{x}$ .

\_\_\_\_\_ 27. What is the value of  $x$  when  $y$  is  $150$ ?

A.  $4$

B.  $\frac{1}{4}$

\_\_\_\_\_ 28. What is the value of  $x$  when  $y$  is  $-20$ ?

A.  $-30$

B.  $30$

\_\_\_\_\_ 29. Which of the following equations would *not* represent the same situation as the equation  $y = \frac{150}{x}$ ?

A.  $xy = 150$

B.  $y = 150x$

\_\_\_\_\_ 30. Which of the following equations would best model the data table below?

$x$	2	3	4	5	6	7	8	9	10
$y$	5	8	9	11	13	15	17	21	21

A.  $y = \frac{2}{x}$

B.  $y = 2x + 1$

**Which number is a solution of the inequality?**

\_\_\_\_\_ 31.  $b > 5.3$

A.  $-12$

B.  $8$

\_\_\_\_\_ 32.  $m > \frac{15}{8}$

A.  $4$

B.  $1$

\_\_\_\_\_ 33.  $1 \geq f$

A.  $3$

B.  $1$

- \_\_\_\_\_ 34.  $5x - 6 \geq 13$   
A.  $\frac{19}{5}$  B.  $-\frac{10}{7}$
- \_\_\_\_\_ 35. Which statement represents “8 more than 6 times a number is 5 less than 3 times that number”?  
A.  $8 - 6x = 5 - 3x$  B.  $6x + 8 = 3x - 5$
- \_\_\_\_\_ 36. Which equation is *not* equivalent to  $W = 1500 - 150T$ ?  
A.  $15(100 - 10T)$  B.  $1500(1 - 150T)$
- \_\_\_\_\_ 37. Which expression is equivalent to the factored form of  $x^2 - 100$ ?  
A.  $(x + 25)(x - 4)$  B.  $(x - 90)(x - 10)$
- \_\_\_\_\_ 38. Which of the following equations represents a linear function?  
A.  $y = 3x(x - 3)$  B.  $y = (3x - 10)(3 + 10)$
- \_\_\_\_\_ 39. Which of the following equations has a graph with exactly one  $x$ -intercept?  
A.  $y = x^2 + 4x + 4$  B.  $y = x^2 - 25$



A.  $8x + 6$

B.  $2x + 6$

### A. $2n + 1$

### B. $n + 1$

A.  $0 = x^2 + 2x + 1$

B.  $0 = x^2 - x$

A.  $7y + 9 = 7y - 3$

B.  $3w + 6 - w = 4w - 2(w - 3)$

A.  $y = \frac{1}{3}x - 10$

B.  $y = 3x + 7$

A.  $y = \frac{1}{2}x - \frac{1}{2}$

B.  $y = \frac{1}{2}x - 3$

A.  $y = -\frac{1}{3}x + 5$

B.  $y = -\frac{1}{3}x - 4$

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- A.  $(-1, 2)$

B.  $(-2, -1)$

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- A.  $(1, -3)$

B.  $(-1, 0)$

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- A.  $(-3, -1)$

B.  $(-8, -5)$

**Algebra CMP2 Final Exam Reivew B (2014)**

**Answer Section**

**MULTIPLE CHOICE**

1. B
2. A
3. B
4. B
5. A
6. A
7. A
8. A
9. B
10. B
11. A
12. B
13. B
14. B
15. B
16. A
17. B
18. B
19. A
20. A
21. B
22. A
23. A
24. B
25. A
26. A
27. A
28. A
29. B
30. B
31. B
32. A
33. B
34. A
35. B
36. B
37. B

- 38. B
- 39. A
- 40. A
- 41. A
- 42. A
- 43. B
- 44. B
- 45. B
- 46. A
- 47. B
- 48. A
- 49. A
- 50. A