

## Fall Semester Exam Review 2018

Indicate the answer choice that best completes the statement or answers the question.

1. Evaluate the given expression if  $x = 25$ ,  $y = 10$ ,  $w = 40$ , and  $z = 11$ .

$$(x - y)^2 + 10wz$$

- a. 4625    b. 5625    c. -4175    d. 4415

Write an algebraic expression to represent the following verbal expression.

2. eight more than the product of a number and 100

- a.  $100x + 8$     b.  $100x - 8$     c.  $100 + 8x$     d.  $8 - 100x$

Solve the given equation. Check your solution.

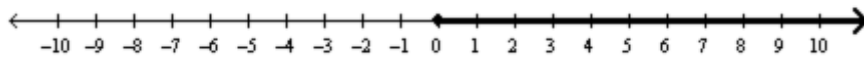
3.  $3|2s + 5| = 18$

- a.  $\{0.5, 5.5\}$     b.  $\{6.5, -5.5\}$     c.  $\{-0.5, -5.5\}$     d.  $\{0.5, -5.5\}$

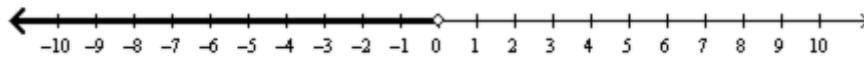
Solve the given inequality. Graph the solution set on a number line.

4.  $4m - 2 < 7$  or  $6m + 2 \geq 2$

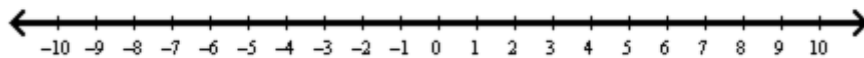
a.  $\{m \mid m \geq 0\}$



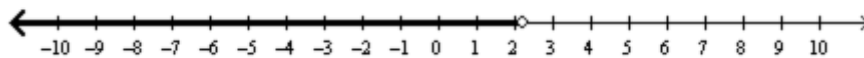
b.  $\{m \mid m < 0\}$



c.  $\{m \mid m \in \mathbb{R}\}$



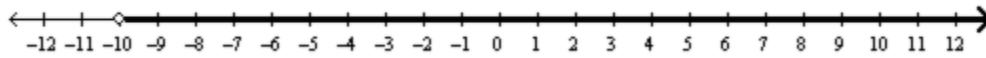
d.  $\{m \mid m < 2.25\}$



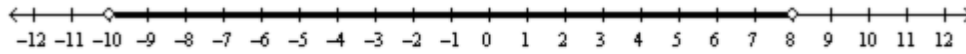
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5.  $p + 7 > -3$  and  $p + 1 < 9$

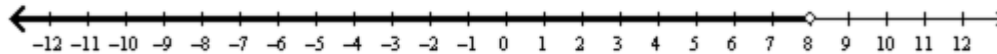
a.  $\{p \mid p > -10\}$



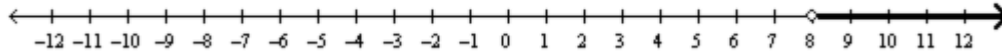
b.  $\{p \mid -10 < p < 8\}$



c.  $\{p \mid p < 8\}$

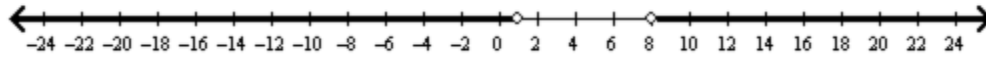


d.  $\{p \mid p > 8\}$

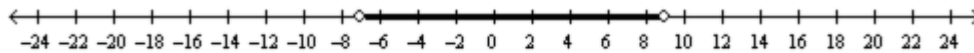


6.  $|p - 1| < 8$

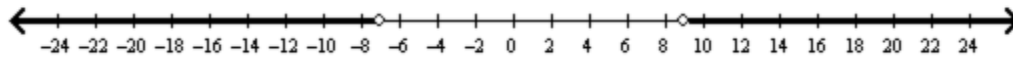
a. The solution set is  $\{p \mid p > 8 \text{ or } p < 1\}$ .



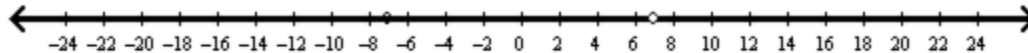
b. The solution set is  $\{p \mid -7 < p < 9\}$ .



c. The solution set is  $\{p \mid p > 9 \text{ or } p < -7\}$ .



d. The solution set is  $\{p \mid p > -7 \text{ or } p < 7\}$ .



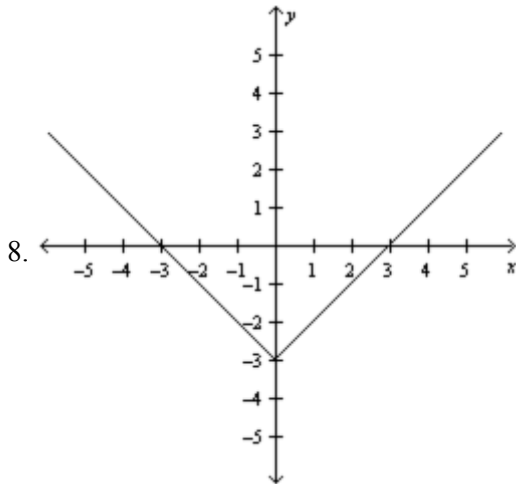
7. The table shows the distance traveled by a truck over different as a function of time. Find the rate of change for the data.

Time (hr)	2	4	6	8	10
Distance (mi)	126	252	378	504	630

- a. 126 miles/hour      b. 63 miles/hour  
 c. 126 hours/mile      d. 63 hours/mile

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Write the function shown in the graph.



- a.  $f(x) = |x| + 3$       b.  $f(x) = |x - 3|$   
c.  $f(x) = |x + 3|$       d.  $f(x) = |x| - 3$

Describe the transformation in each function.

9.  $y = (x - 10)^2$
- a. translation of the graph of  $y = x^2$  left 10 units      b. translation of the graph of  $y = x^2$  up 10 units  
c. translation of the graph of  $y = x^2$  down 10 units      d. translation of the graph of  $y = x^2$  right 10 units

Use substitution to solve each system of equations.

10.  $y = 6x - 23$   
 $4x - 5y = 37$

- a. (3, -5)  
b. (-5, 3)  
c. (-3, 4)  
d. (-4, 6)

Use the elimination method to solve each system of equations.

11.  $-2x - 4y = 6$   
 $5x + 4y = 9$

- a. (-4, 5)  
b. (-2, -4)  
c. (-4, -2)  
d. (5, -4)

12. Use  $A = \begin{bmatrix} 1 & 7 \\ -1 & 4 \end{bmatrix}$  and  $B = \begin{bmatrix} 5 & 5 \\ 4 & -5 \end{bmatrix}$  to determine whether  $AB = BA$  for the given matrices.

- a. Yes      b. No

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13. Write a matrix equation for the system of equations below.

$$-9x - 3y = 48$$

$$-8x + 3y = 20$$

a. 
$$\begin{bmatrix} -9 & -3 \\ -8 & 3 \end{bmatrix} \cdot \begin{bmatrix} 48 \\ 20 \end{bmatrix} = \begin{bmatrix} x \\ y \end{bmatrix}$$

b. 
$$\begin{bmatrix} -9 & -3 \\ -8 & 3 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 20 \\ 48 \end{bmatrix}$$

c. 
$$\begin{bmatrix} -9 & -3 \\ -8 & 3 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 48 \\ 20 \end{bmatrix}$$

d. 
$$\begin{bmatrix} 3 & 3 \\ 8 & -9 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 48 \\ 20 \end{bmatrix}$$

*Indicate the answer choice that best completes the statement or answers the question.*

*Solve the equation by factoring.*

15.  $2x^2 + 11x + 14 = 0$

a.  $\{4, -\frac{7}{2}\}$       b.  $\{-\frac{7}{2}, -2\}$

c.  $\{4, 7\}$       d.  $\{-2, 7\}$

16.  $x^2 + 2x - 35 = 0$

a.  $\{-5, 7\}$       b.  $\{-7, 5\}$

c.  $\{5, 7\}$       d.  $\{-5, -7\}$

*Find the exact solution of the following quadratic equation by using the Quadratic Formula.*

17.  $-x^2 + 5x + 9 = 0$

a.  $\{(5 \pm \sqrt{61}) / -2\}$       b.  $\{(-5 \pm \sqrt{30}) / -2\}$

c.  $\{(-5 \pm \sqrt{-11}) / -2\}$       d.  $\{(-5 \pm \sqrt{61}) / -2\}$

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### Answer Key

1. a

2. a

3. d

4. c

5. b

6. b

7. b

8. d

9. d

10. a

11. d

12. b

13. c

15. b

16. b

17. d