

MTH 05 Sample Final Exam, Version 9

1. Simplify.

$$4\sqrt{24} + 3\sqrt{150}$$

- A. $91\sqrt{6}$
 - B. $24\sqrt{2} + 18\sqrt{5}$
 - C. $23\sqrt{6}$
 - D. $11\sqrt{6}$
-

2. Simplify completely.

$$\sqrt{7}(\sqrt{14} + 3\sqrt{7})$$

- A. $7\sqrt{2} + 3\sqrt{7}$
 - B. $7\sqrt{2} + 21$
 - C. $49\sqrt{2}$
 - D. $2\sqrt{7} + 21$
-

3. Simplify completely.

$$\frac{\sqrt{6}\sqrt{84}}{\sqrt{2}}$$

- A. $6\sqrt{42}$
 - B. $36\sqrt{7}$
 - C. $7\sqrt{6}$
 - D. $6\sqrt{7}$
-

4. Simplify.

$$(8x^{11}y^{-4})(-3x^{-5}y^6)$$

- A. $5x^6y^2$
 - B. $-\frac{24}{x^{55}y^{24}}$
 - C. $-24x^6y^2$
 - D. $-\frac{24x^{16}}{y^{10}}$
-

5. Simplify.

$$-10x^6 x^6 y^{16} x^{-5}$$

- A. $-\frac{10y^{16}}{x^7}$
- B. $10x^7y^{16}$
- C. $-10x^{23}$
- D. $-10x^7y^{16}$

6. Simplify Completely.

$$(19x^2 - 9x + 9) - (-3x^2 - 3x + 5)$$

- A. $16x^2 - 6x + 4$
- B. $22x^2 - 6x + 4$
- C. $22x^2 - 6x + 14$
- D. $22x^2 + 12x + 4$

7. Multiply.

$$(6x - 2)(x^2 - 2x - 2)$$

- A. $6x^3 - 10x^2 - 8x + 4$
- B. $6x^3 - 14x^2 - 8x + 4$
- C. $6x^3 - 14x^2 - 12x + 4$
- D. $6x^3 - 10x^2 - 12x + 4$

8. Simplify completely.

$$\frac{25x^{16} - 10x^4 - 20x^2}{-5x^2}$$

- A. $-5x^{14} + 2x^2 + 4$
- B. $25x^{16} - 10x^4$
- C. $-5x^{14} - 2x^2 - 4$
- D. $-5x^{14} + 2x^2$

9. Factor completely.

$$2x^3 - 50xy^2$$

- A. $2x(x - 5y)(x + 5y)$
- B. $2x(x^2 - 25y^2)$
- C. $2(x^3 - 25xy^2)$
- D. $2x(x - 5y)^2$

10. Which of the following is a factor of the polynomial?

$$3x^2 - 11x + 6$$

- A. $3x - 2$
- B. $3x + 2$
- C. $x - 2$
- D. $x + 3$

11. Which of the following is a factor of the polynomial?

$$6ac - 9ad + 16bc - 24bd$$

- A. $2c + 3d$
- B. $3c + 8d$
- C. $3a - 8b$
- D. $3a + 8b$

12. If y represents a number, which equation is a correct translation of the sentence?

60 less than 8 times a number is 72.

- A. $8(60 - y) = 72$
- B. $8y - 60 = 72$
- C. $8(y - 60) = 72$
- D. $60 - 8y = 72$

13. Solve for x .

$$\frac{x-4}{2} - \frac{8}{3} = \frac{x-16}{3}$$

- A. $x = -1$
- B. $x = 2$
- C. $x = 4$
- D. $x = -4$

14. Solve for x .

$$71 - 3x = -2(5 - 3x)$$

- A. $x = 7$
- B. $x = 5$
- C. $x = 9$
- D. $x = 11$

15. What is the value of the y -coordinate of the solution to the system of equations.

$$\begin{aligned}x + 3y &= 9 \\ -5x + 5y &= 35\end{aligned}$$

- A. $y = 2$
- B. $y = 6$
- C. $y = 4$
- D. $y = 0$

16. Solve for y .

$$z = 6x + 3y$$

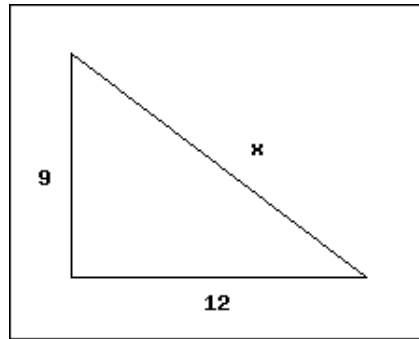
- A. $y = \frac{z}{3} - 6x$
- B. $y = \frac{z + 6x}{3}$
- C. $y = \frac{z - 6x}{3}$
- D. $y = 3(z - 6x)$

17. Find all solutions to the equation.

$$2x^2 + 2x = 0$$

- A. $x = 0$ or $x = -1$
- B. Only $x = -1$
- C. $x = 0$ or $x = 1$
- D. Only $x = 1$

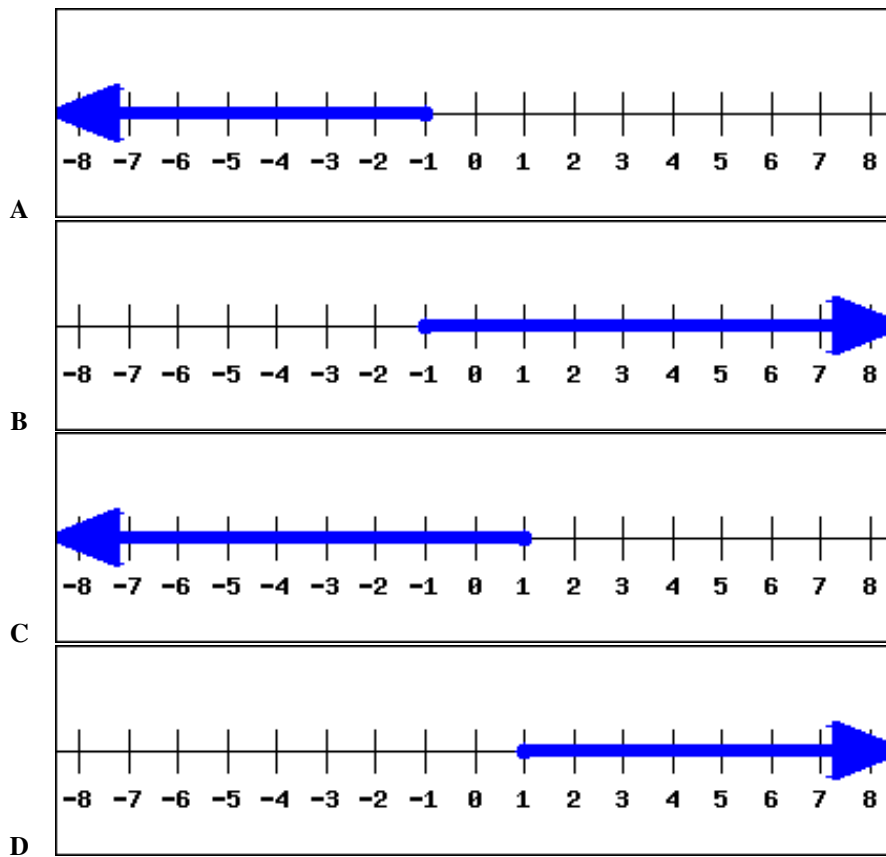
18. What is the value of x in the right triangle?



- A. $\sqrt{15}$
- B. 21
- C. $\sqrt{21}$
- D. 15

19. Find the graph of the solution to the inequality.

$$4x + 7 \geq 5x + 8$$

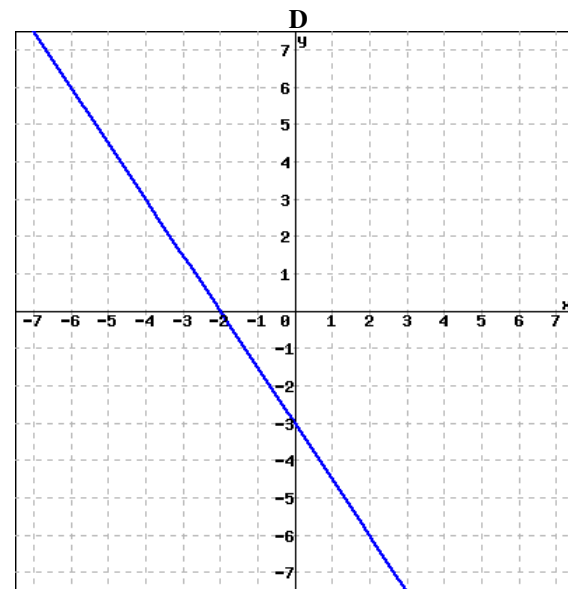
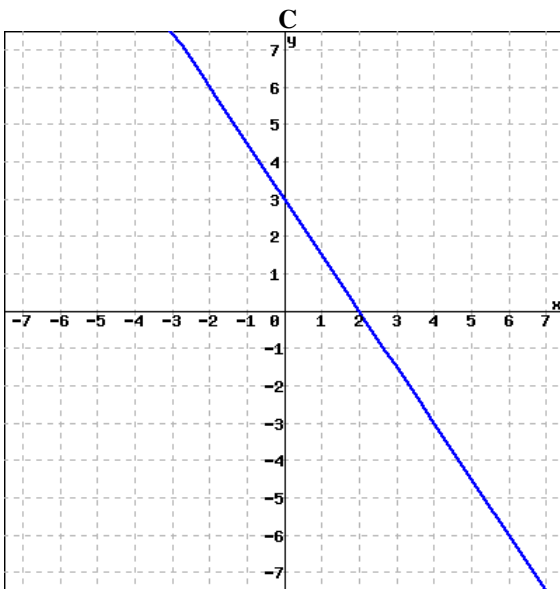
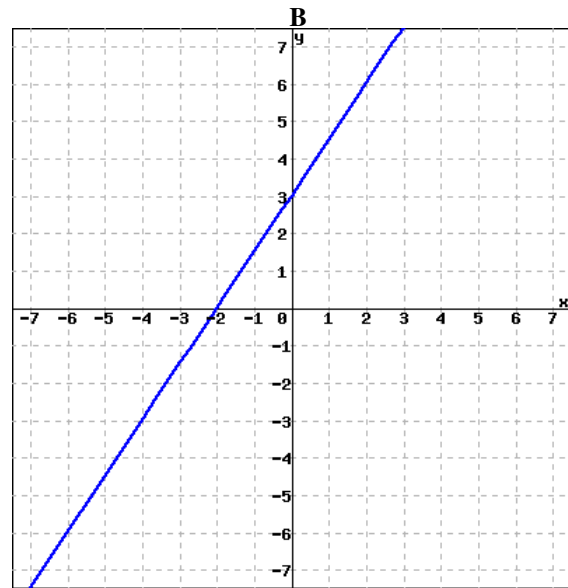
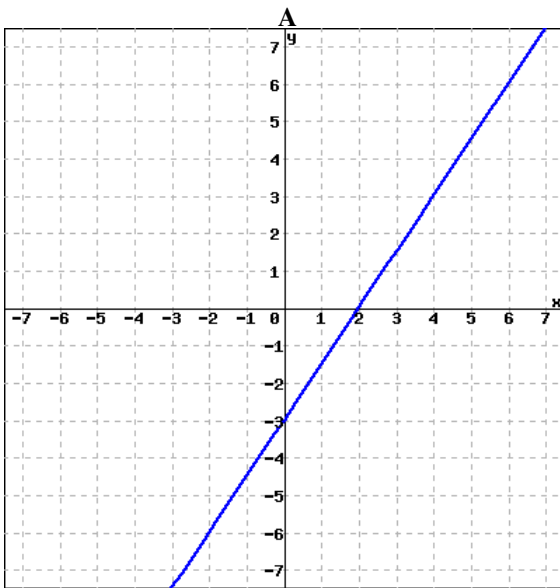


20. Given $a = -3$ and $b = 2$, evaluate the expression given below.

$$b^2 + a^2b + ab$$

- A. -28
- B. 28
- C. 20
- D. 16

21. Which of the following is the graph of the equation $3x - 2y = 6$?



22. Find the equation of the line passing through the points $(-4, -9)$ and $(4, 15)$. Write the equation in slope-intercept form.

- A. $y = -3x - 21$
- B. $y = 3x - 9$
- C. $y = 3x + 3$
- D. $y = -3x + 27$

23. Find the equation of the horizontal line passing through the point $(-9, 12)$.

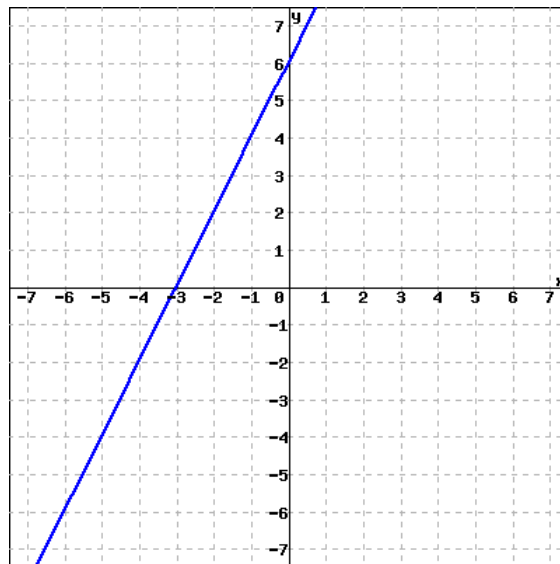
- A. $x = -9$
- B. $y = x + 12$
- C. $y = -\frac{4}{3}x + 12$
- D. $y = 12$

24. Find the slope and y -intercept for the graph of the equation.

$$-5x + 9y = 45$$

- A. Slope = $-\frac{5}{9}$ and y -intercept = $(0, 5)$
- B. Slope = $\frac{5}{9}$ and y -intercept = $(0, 5)$
- C. Slope = $-\frac{9}{5}$ and y -intercept = $(0, 45)$
- D. Slope = $\frac{9}{5}$ and y -intercept = $(0, 45)$

25. What is the slope of the line graphed below?



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

Answers.

- 1.C
- 2.B
- 3.D
- 4.C
- 5.D
- 6.B
- 7.B
- 8.A
- 9.A
- 10.A
- 11.D
- 12.B
- 13.D
- 14.C
- 15.C
- 16.C
- 17.A
- 18.D
- 19.A
- 20.D
- 21.A
- 22.C
- 23.D
- 24.B
- 25.C