

MTH 05 Sample Final Exam, Version 2

1. Find the equation of the horizontal line passing through the point (10,5).

- A. $y = \frac{1}{2}x + 5$
 - B. $y = x + 5$
 - C. $y = 5$
 - D. $x = 10$
-

2. Simplify completely.

$$\sqrt{2}(\sqrt{14} - 5\sqrt{2})$$

- A. $2\sqrt{7} - 10$
 - B. $2\sqrt{7} - 5\sqrt{2}$
 - C. $4\sqrt{7}$
 - D. $7\sqrt{2} - 10$
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3. If k represents a number, which equation is a correct translation of the sentence?

15 subtracted from 3 times a number is 44.

- A. $3(15 - k) = 44$
 - B. $3(k - 15) = 44$
 - C. $15 - 3k = 44$
 - D. $3k - 15 = 44$
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4. Simplify Completely.

$$(16x^2 - 14x + 14) - (-9x^2 - 5x + 5)$$

- A. $25x^2 - 9x + 9$
 - B. $25x^2 - 9x + 19$
 - C. $25x^2 + 19x + 9$
 - D. $7x^2 - 9x + 9$
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5. Find the equation of the line passing through the points $(-7, -31)$ and $(4, 13)$. Write the equation in slope-intercept form.

- A. $y = -4x - 59$
 - B. $y = 4x - 3$
 - C. $y = 4x - 31$
 - D. $y = -4x + 29$
-

6. Simplify.

$$5\sqrt{75} - 3\sqrt{12}$$

- A. $-19\sqrt{3}$
 - B. $15\sqrt{5} - 9\sqrt{2}$
 - C. $113\sqrt{3}$
 - D. $19\sqrt{3}$
-

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

$$10cx + 15cy - 12dx - 18dy$$

- A. $5x - 6y$
- B. $5c + 6d$
- C. $5c - 6d$
- D. $2x - 3y$

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

$$3x^2 + 11x - 20$$

- A. $3x + 5$
- B. $3x + 4$
- C. $x - 5$
- D. $x + 5$

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

$$-6x - 7y = -14$$

- A. Slope = $\frac{7}{6}$ and y-intercept = $(0, -14)$
- B. Slope = $\frac{6}{7}$ and y-intercept = $(0, 2)$
- C. Slope = $-\frac{6}{7}$ and y-intercept = $(0, 2)$
- D. Slope = $-\frac{7}{6}$ and y-intercept = $(0, -14)$

10. Simplify.

$$\frac{40x^6(y^7)^5}{2x^{-6}y^{-21}}$$

- A. $20y^{14}$
- B. $\frac{1}{20}x^{12}y^{14}$
- C. $20y^{33}$
- D. $20x^{12}y^{56}$

11. Solve for x .

$$-\frac{1}{2} = \frac{x}{20} - \frac{2}{5}$$

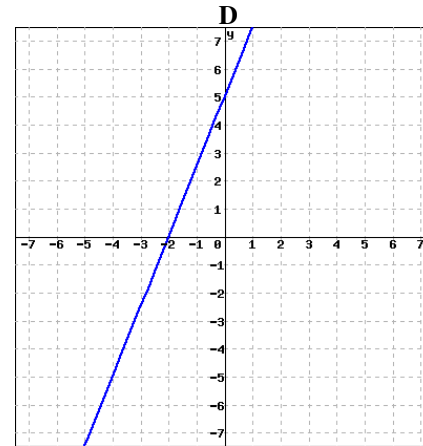
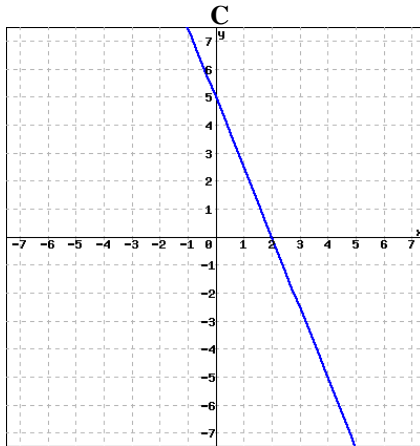
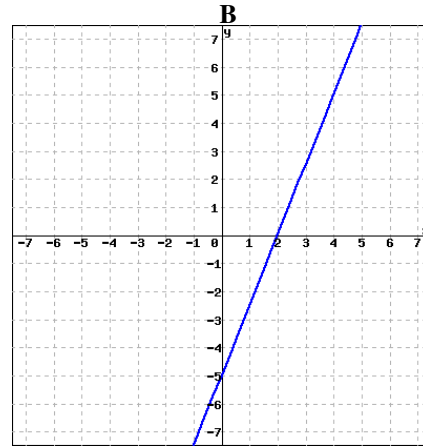
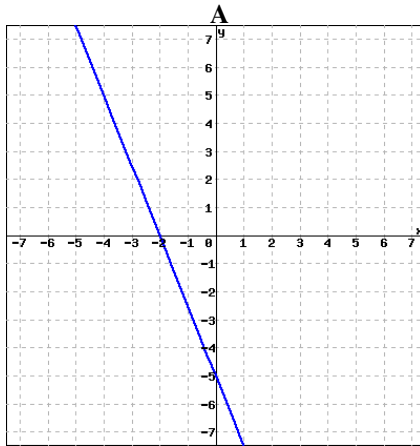
- A. $x = -4$
- B. $x = 3$
- C. $x = -2$
- D. $x = 5$

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

$$\begin{aligned} 3x - y &= 1 \\ -x - y &= 5 \end{aligned}$$

- A. $y = -5$
- B. $y = -4$
- C. $y = -3$
- D. $y = -6$

13. Which of the following is the graph of the equation $-15x + 6y = 30$?



14. Factor completely.

$$36x^2y - 16y^3$$

- A. $4y(9x^2 - 4y^2)$
- B. $4(9x^2y - 4y^3)$
- C. $4y(3x - 2y)(3x + 2y)$
- D. $4y(3x - 2y)^2$

15. Solve for x .

$$2(-4 + 3x) = 2x + 16$$

- A. $x = 10$
- B. $x = 6$
- C. $x = 4$
- D. $x = 8$

16. Solve for y .

$$z = 9x + 5y$$

- A. $y = \frac{z}{5} - 9x$
- B. $y = 5(z - 9x)$
- C. $y = \frac{z - 9x}{5}$
- D. $y = \frac{z + 9x}{5}$

17. Find all solutions to the equation.

$$-3x^2 - 15x = 0$$

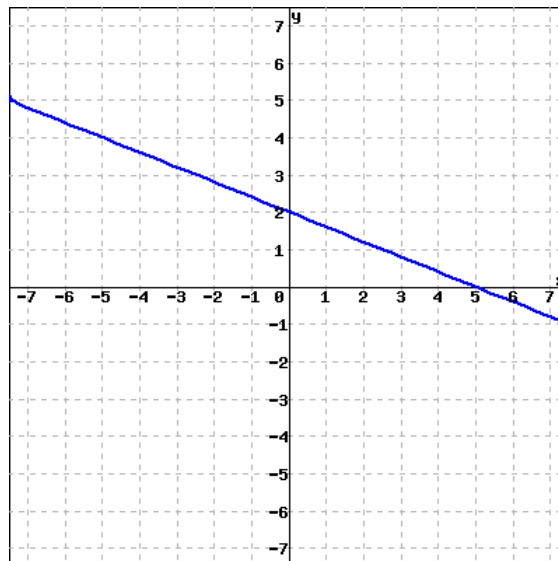
- A. Only $x = 5$
- B. $x = 0$ or $x = 5$
- C. $x = 0$ or $x = -5$
- D. Only $x = -5$

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

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

- A. -45
- B. 9
- C. -27
- D. 27

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



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

20. Simplify completely.

$$\frac{\sqrt{7}\sqrt{28}}{\sqrt{2}}$$

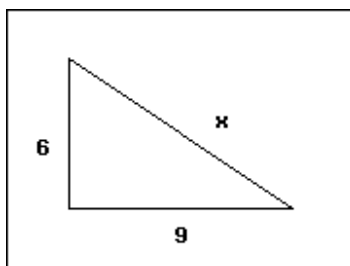
- A. $7\sqrt{14}$
- B. $2\sqrt{7}$
- C. $49\sqrt{2}$
- D. $7\sqrt{2}$

21. Simplify completely.

$$\frac{-12x^{11} - 6x^7 + 15x^4}{-3x^4}$$

- A. $-12x^{11} - 6x^7$
- B. $4x^7 + 2x^3 - 5$
- C. $4x^7 + 2x^3$
- D. $4x^7 - 2x^3 + 5$

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



- A. $\sqrt{15}$
- B. $13\sqrt{3}$
- C. $3\sqrt{13}$
- D. 15

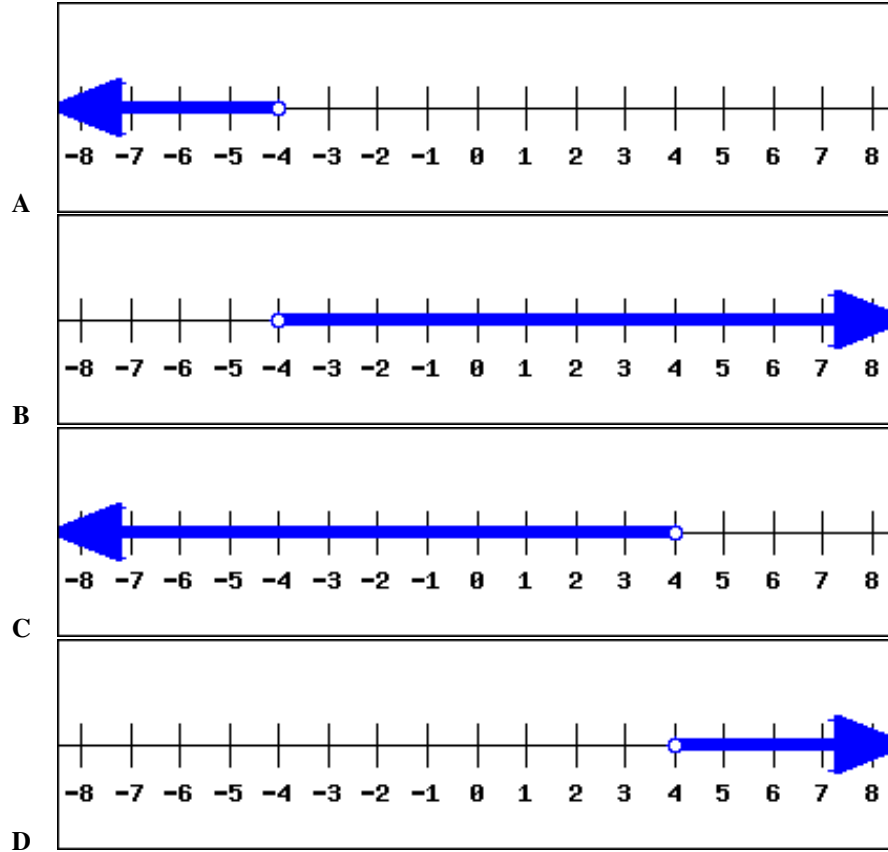
23. Multiply.

$$(4x - 5)(x^2 - 3x + 3)$$

- A. $4x^3 - 7x^2 + 27x - 15$
- B. $4x^3 - 17x^2 + 27x - 15$
- C. $4x^3 - 17x^2 + 12x - 15$
- D. $4x^3 - 7x^2 + 12x - 15$

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

$$-5x - 6 > 8x + 46$$



25. Simplify.

$$-8x^{-4}x^{-3}y^{15}x^{-5}$$

- A. $-\frac{8y^{15}}{x^{12}}$
- B. $-8x^{12}y^{15}$
- C. $-8x^3$
- D. $\frac{8y^{15}}{x^{12}}$

Answers.

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