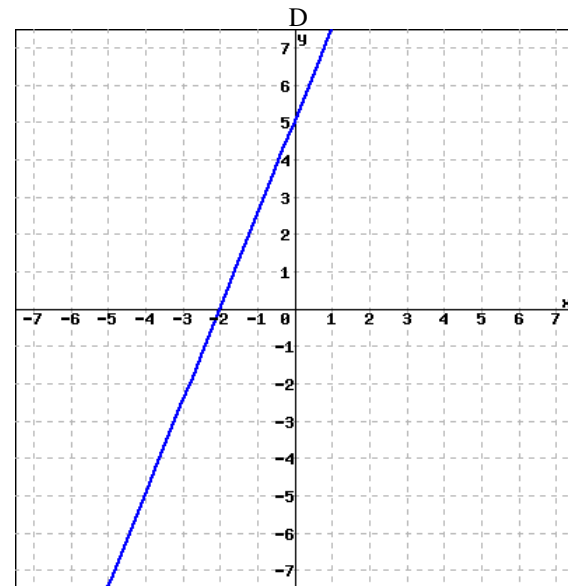
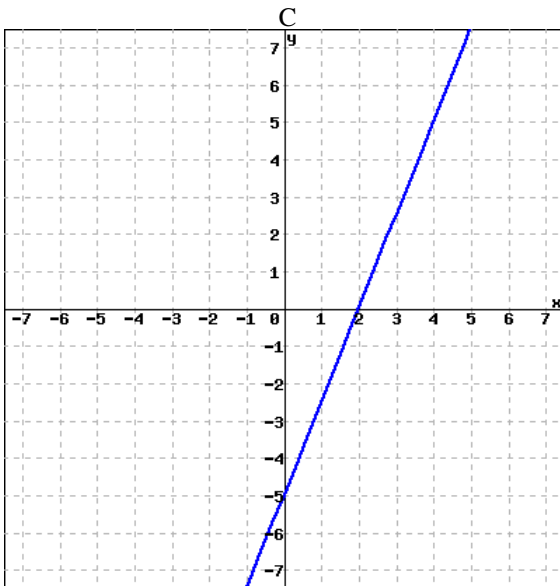
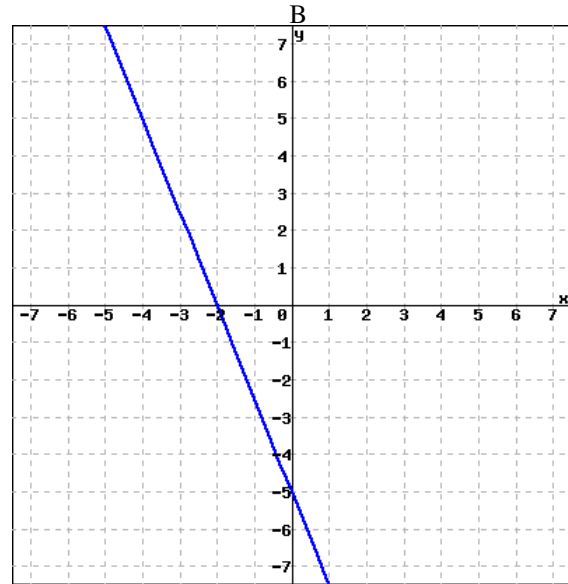
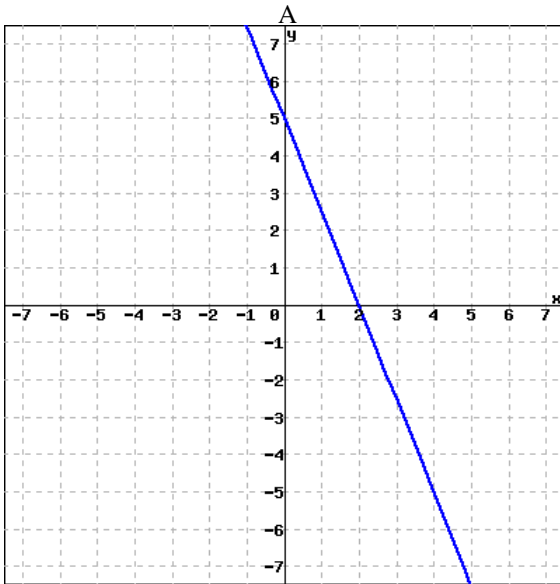


MTH 05 Sample Final Exam, Version 8

Problem 1. (4 pts) Which of the following is the graph of the equation $-15x + 6y = -30$?



Problem 2. (4 pts) Simplify completely.

$$\frac{-6x^{14} - 4x^7 + 10x^4}{-2x^4}$$

- A. $3x^{10} + 2x^3$
- B. $3x^{10} - 2x^3 + 5$
- C. $-6x^{14} - 4x^7$
- D. $3x^{10} + 2x^3 - 5$

Problem 3. (4 pts) Simplify.

$$\frac{6x^7(y^7)^4}{3x^{-7}y^{-31}}$$

- A. $\frac{2}{y^3}$
- B. $\frac{x^{14}}{2y^3}$
- C. $2x^{14}y^{59}$
- D. $2y^{42}$

Problem 4. (4 pts) Over four years the price of a car decreased to \$18000, which is 90% of the original price. What was the original price of the car?

- A. \$1800
- B. \$16200
- C. \$180000
- D. \$20000

Problem 5. (4 pts) What is the value of the x -coordinate of the solution to the system of equations.

$$\begin{aligned} -x - y &= -1 \\ 5x + 2y &= -10 \end{aligned}$$

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

Problem 6. (4 pts) If l represents a number, which equation is a correct translation of the sentence?

26 is 18 less than 7 times a number.

- A. $26 = 18 - 7l$
- B. $26 = 7(18 - l)$
- C. $26 = 7l - 18$
- D. $26 = 7(l - 18)$

Problem 7. (4 pts) Divide. Give the answer in scientific notation.

$$\frac{4 \times 10^{-2}}{8 \times 10^9}$$

- A. 5.0×10^{-11}
- B. 5.0×10^{-12}
- C. 5.0×10^{-10}
- D. 0.5×10^{-11}

Problem 8. (4 pts) Find all the solutions to the equation

$$-2x^2 - 8x = 0$$

- A. $x = 0$ or $x = -4$
- B. Only $x = 4$
- C. Only $x = -4$
- D. $x = 0$ or $x = 4$

Problem 9. (4 pts) Simplify Completely.

$$(6x - 4)(x^2 + 3x - 2)$$

- A. $6x^3 + 14x^2 - 24x + 8$
- B. $6x^3 + 14x^2 - 12x + 8$
- C. $6x^3 + 22x^2 - 12x + 8$
- D. $6x^3 + 22x^2 - 24x + 8$

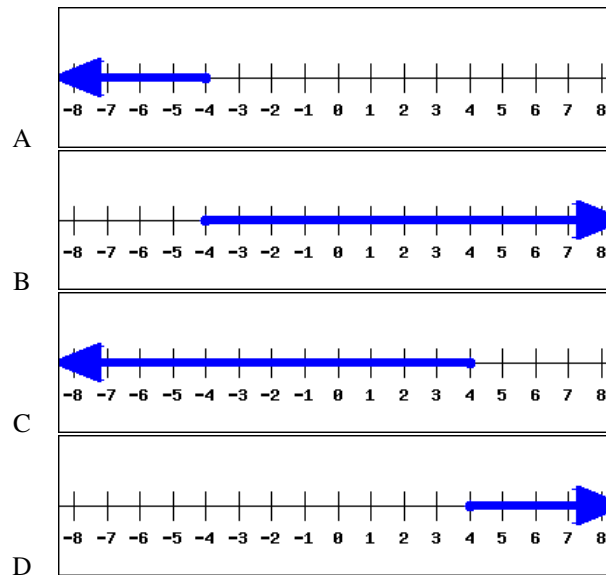
Problem 10. (4 pts) Simplify Completely.

$$(7x^2 - 10x + 13) - (-2x^2 - 2x + 5)$$

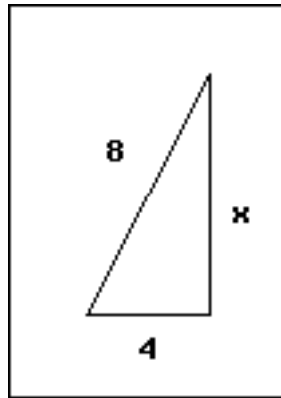
- A. $9x^2 + 12x + 8$
- B. $9x^2 - 8x + 18$
- C. $9x^2 - 8x + 8$
- D. $5x^2 - 8x + 8$

Problem 11. (4 pts) Find the graph of the solution to the inequality.

$$x - 7 \geq 2x - 3$$



Problem 12. (4 pts) What is the value of x in the right triangle?



- A. $3\sqrt{4}$
- B. 2
- C. $\sqrt{2}$
- D. $4\sqrt{3}$

Problem 13. (4 pts) Evaluate $f(-5)$ for $f(x) = 3x^2 + 3x - 2$

- A. -92
- B. 88
- C. 92
- D. 58

Problem 14. (4 pts) Simplify.

$$5\sqrt{24} - 4\sqrt{96}$$

- A. $-44\sqrt{6}$
- B. $6\sqrt{6}$
- C. $-6\sqrt{6}$
- D. $30\sqrt{2} - 24\sqrt{4}$

Problem 15. (4 pts) Find the slope and y-intercept for the graph of the equation.

$$-7x - 2y = -8$$

- A. Slope = $-\frac{7}{2}$ and y-intercept = (0, 4)
- B. Slope = $\frac{2}{7}$ and y-intercept = (0, -8)
- C. Slope = $-\frac{2}{7}$ and y-intercept = (0, -8)
- D. Slope = $\frac{7}{2}$ and y-intercept = (0, 4)

Problem 16. (4 pts) Which of the following is a factor of the polynomial?

$$12cx - 4cy - 15dx + 5dy$$

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

Problem 17. (4 pts) Find the equation of the line passing through the points $(-1, 2)$ and $(5, 20)$. Write the equation in slope intercept form.

- A. $y = -3x - 1$
- B. $y = -3x + 35$
- C. $y = 3x + 5$
- D. $y = 3x + 2$

Problem 18. (4 pts) Which of the following is a factor of the polynomial?

$$3x^2 - 11x - 70$$

- A. $x + 10$
- B. $x + 7$
- C. $3x - 10$
- D. $3x + 10$

Problem 19. (4 pts) Find the equation of the horizontal line passing through the point $(10, -7)$.

- A. $x = 10$
- B. $y = x - 7$
- C. $y = -\frac{7}{10}x - 7$
- D. $y = -7$

Problem 20. (4 pts) Find all the solutions to the equation.

$$-3z^2 = -108$$

- A. $z = -6$ or $z = 6$
- B. *Only* $z = 6$
- C. $z = 0$ or $z = 36$
- D. $z = 6$ or $z = 36$

Problem 21. (4 pts)

Peter bought 3 toy cars for \$78.

How much do 4 cars cost?

- A. \$77
- B. \$82
- C. \$12
- D. \$104

Problem 22. (4 pts) Solve for y .

$$z = 5x + 8y$$

- A. $y = \frac{z + 5x}{8}$
- B. $y = 8(z - 5x)$
- C. $y = \frac{z - 5x}{8}$
- D. $y = \frac{z}{8} - 5x$

Problem 23. (4 pts) Solve the equation for x

$$-43 + 3x = -2(5 + 4x)$$

- A. $x = 4$
- B. $x = 1$
- C. $x = 3$
- D. $x = 2$

Problem 24. (4 pts) Simplify completely.

$$\frac{\sqrt{2}\sqrt{84}}{\sqrt{7}}$$

- A. $2\sqrt{6}$
- B. $6\sqrt{2}$
- C. $2\sqrt{12}$
- D. $4\sqrt{6}$

Problem 25. (4 pts) Factor completely.

$$32x^3 - 50xy^2$$

- A. $2x(4x - 5y)(4x + 5y)$
- B. $2x(16x^2 - 25y^2)$
- C. $2(16x^3 - 25xy^2)$
- D. $2x(4x - 5y)^2$