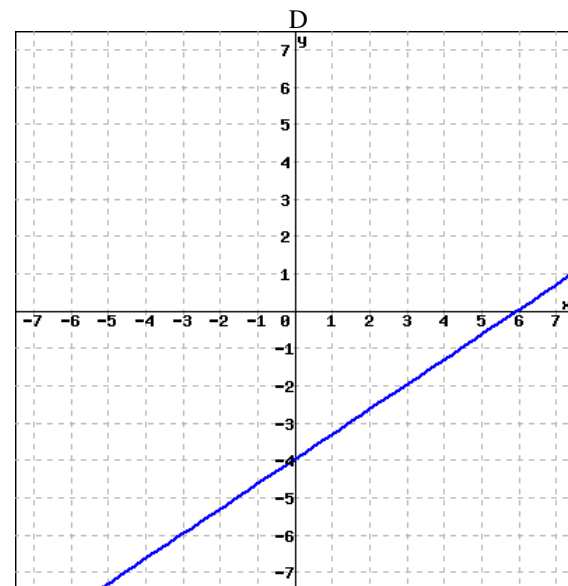
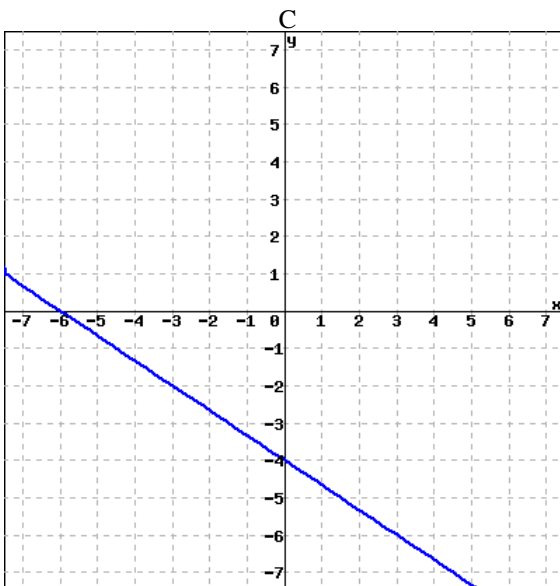
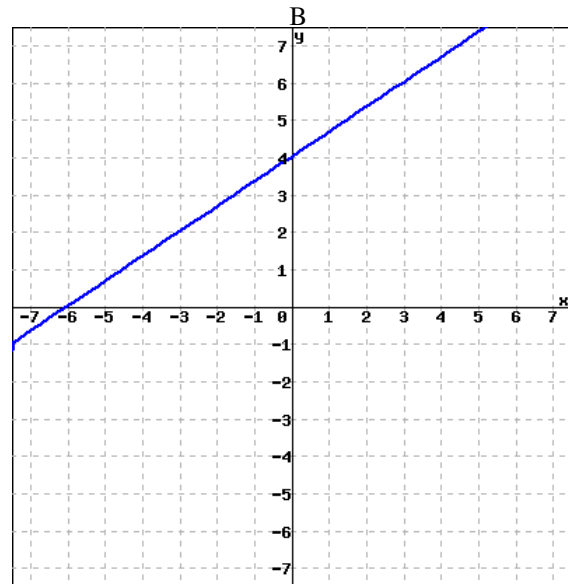
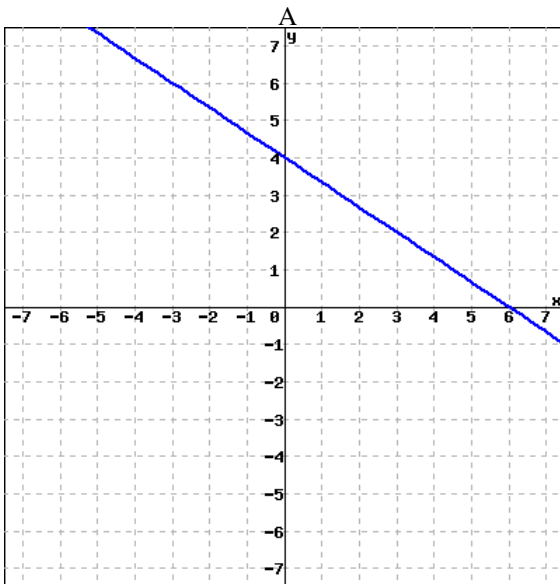


MTH 05 Sample Final Exam, Version 4

**Problem 1.** (4 pts) Which of the following is the graph of the equation

$$-4x + 6y = 24?$$



**Problem 2.** (4 pts) Which of the following is a factor of the polynomial?

$$3cw + 6cz - 2dw - 4dz$$

- A.  $3w - 2z$
- B.  $w + 2z$
- C.  $w - 2z$
- D.  $3c + 2d$

---

**Problem 3.** (4 pts) Which of the following is a factor of the polynomial?

$$3x^2 + 26x - 9$$

- A.  $x - 9$
- B.  $3x + 9$
- C.  $3x + 1$
- D.  $x + 9$

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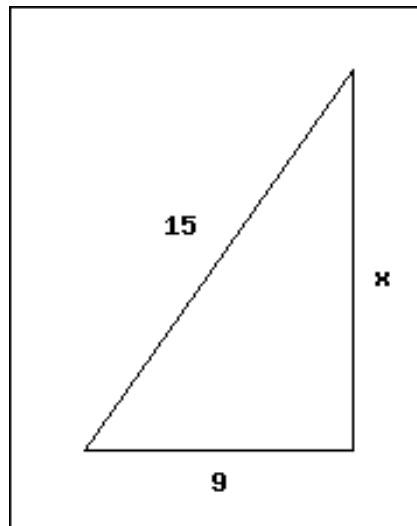
**Problem 4.** (4 pts) What is the value of the  $y$ -coordinate of the solution to the system of equations.

$$\begin{aligned} -2x - y &= -3 \\ -5x + 3y &= -2 \end{aligned}$$

- A.  $y = -1$
- B.  $y = 2$
- C.  $y = 0$
- D.  $y = 1$

---

**Problem 5.**(4 pts) What is the value of  $x$  in the right triangle?



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

**Problem 6.** (4 pts)

Peter bought 4 toy cars for \$76.

How many cars can he buy for \$ 171?

- A. 8
- B. 13
- C. 9
- D. 12

---

**Problem 7.** (4 pts) Simplify Completely.

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

- A.  $4x^3 - 3x^2 - 2x + 15$
- B.  $4x^3 - 13x^2 - 12x + 15$
- C.  $4x^3 - 13x^2 - 2x + 15$
- D.  $4x^3 - 3x^2 - 12x + 15$

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**Problem 8.** (4 pts) Find the equation of the horizontal line passing through the point  $(4, -10)$ .

- A.  $x = 4$
- B.  $y = -10$
- C.  $y = x - 10$
- D.  $y = -\frac{5}{2}x - 10$

---

**Problem 9.** (4 pts) Solve the equation for  $x$

$$21 + 3x = 2(3 + 3x)$$

- A.  $x = 9$
- B.  $x = 5$
- C.  $x = 3$
- D.  $x = 7$

---

**Problem 10.** (4 pts) Simplify.

$$8\sqrt{5} - 5\sqrt{125}$$

- A.  $40 - 25\sqrt{5}$
- B.  $17\sqrt{5}$
- C.  $-17\sqrt{5}$
- D.  $-117\sqrt{5}$

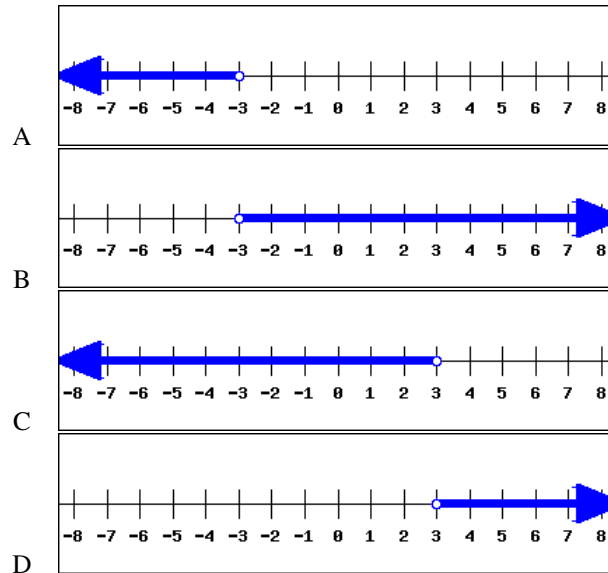
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**Problem 11.** (4 pts) Over four years the price of a car decreased from \$20000 by 70%. What is the price of the car now?

- A. \$28571
- B. \$6000
- C. \$14000
- D. \$66667

**Problem 12.**(4 pts) Find the graph of the solution to the inequality.

$$-3x - 9 < x + 3$$



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**Problem 13.** (4 pts) Find all the solutions to the equation

$$2y^2 + 12y = 0$$

- A.  $y = 0$  or  $y = -6$
- B. Only  $y = 6$
- C.  $y = 0$  or  $y = 6$
- D. Only  $y = -6$

---

**Problem 14.** (4 pts) Solve for  $x$ .

$$z = 9x + 5y$$

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

---

**Problem 15.** (4 pts) Factor completely.

$$32x^3 - 18xy^2$$

- A.  $2x(4x - 3y)(4x + 3y)$
- B.  $2x(16x^2 - 9y^2)$
- C.  $2(16x^3 - 9xy^2)$
- D.  $2x(4x - 3y)^2$

**Problem 16.** (4 pts) Find the slope and y-intercept for the graph of the equation.

$$5x - 3y = -18$$

- A. Slope =  $\frac{3}{5}$  and y-intercept =  $(0, -18)$
- B. Slope =  $-\frac{5}{3}$  and y-intercept =  $(0, 6)$
- C. Slope =  $-\frac{3}{5}$  and y-intercept =  $(0, -18)$
- D. Slope =  $\frac{5}{3}$  and y-intercept =  $(0, 6)$

---

**Problem 17.** (4 pts) Find all the solutions to the equation.

$$2y^2 = 8$$

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

---

**Problem 18.** (4 pts) Multiply. Give the answer in scientific notation.

$$(3 \times 10^5)(5 \times 10^9)$$

- A.  $1.5 \times 10^{13}$
- B.  $15 \times 10^{14}$
- C.  $1.5 \times 10^{15}$
- D.  $1.5 \times 10^{14}$

---

**Problem 19.** (4 pts) Evaluate  $h(-5)$  for  $h(x) = -2x^2 - x - 12$

- A.  $-43$
- B.  $43$
- C.  $67$
- D.  $-57$

---

**Problem 20.** (4 pts) If  $n$  represents a number, which equation is a correct translation of the sentence?

49 subtracted from 7 times a number is 11.

- A.  $49 - 7n = 11$
- B.  $7n - 49 = 11$
- C.  $7(49 - n) = 11$
- D.  $7(n - 49) = 11$

---

**Problem 21.** (4 pts) Simplify Completely.  $(12x^2 - 10x + 11) - (-6x^2 - 4x + 2)$

- A.  $18x^2 - 6x + 9$
- B.  $18x^2 - 6x + 13$
- C.  $18x^2 + 14x + 9$
- D.  $6x^2 - 6x + 9$

**Problem 22.** (4 pts) Simplify completely.

$$\frac{\sqrt{3}\sqrt{30}}{\sqrt{5}}$$

- A.  $2\sqrt{3}$
- B.  $9\sqrt{2}$
- C.  $3\sqrt{2}$
- D.  $3\sqrt{6}$

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**Problem 23.** (4 pts) Find the equation of the line passing through the points  $(-1, -2)$  and  $(5, -14)$ . Write the equation in slope intercept form.

- A.  $y = 2x + 0$
- B.  $y = -2x - 2$
- C.  $y = -2x - 4$
- D.  $y = 2x - 24$

---

**Problem 24.** (4 pts) Simplify completely.

$$\frac{-4x^{17} + 6x^8 - 8x^3}{-2x^3}$$

- A.  $2x^{14} + 3x^5 - 4$
- B.  $2x^{14} - 3x^5$
- C.  $-4x^{17} + 6x^8$
- D.  $2x^{14} - 3x^5 + 4$

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**Problem 25.** (4 pts) Simplify.

$$\frac{48x^6(y^{-7})^3}{4x^{-5}y^{-22}}$$

- A.  $\frac{12x}{y^{43}}$
- B.  $12x^{11}y$
- C.  $\frac{x^{11}}{12y^{43}}$
- D.  $12xy^{18}$

Answer:

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