

Practice for the second midterm.

Print Name: _____

1. Evaluate: $-4 - 3(6 - 9) + 3^2$

2. Simplify $\sqrt{75}$

3. Simplify: $(2x^5y^6)^2(x^2y)^5$.

4. Evaluate: $\frac{x^2 - 3x}{3x + 1}$ when $x = -2$.

5. Expand and simplify: $(2x - 3)(5x^2 + 4x - 5)$.

6. Solve: $5(2x - 3) = -3(x - 8)$.

7. Solve: $\frac{2x - 1}{3} = \frac{x + 1}{6}$.

8. Solve the system:
$$\begin{cases} x - 3y = 7 \\ 5x + 2y = 1 \end{cases}$$

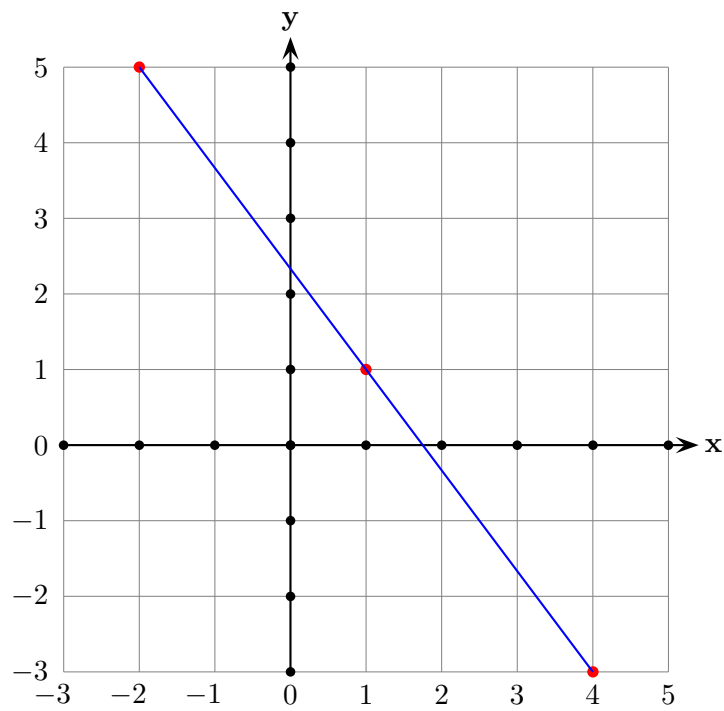
9. Solve the system:
$$\begin{cases} 2x - 3y = 12 \\ 3x + 6y = -3 \end{cases}$$

10. Solve the system:
$$\begin{cases} 5x - 2y = -13 \\ 4x + 3y = 8 \end{cases}$$

11. Find the slope of the line that contains the points $(1, 2)$ and $(3, 10)$.

12. Find the slope of the line with equation $y = -3x + 2$.

13. Find the slope of the following line:



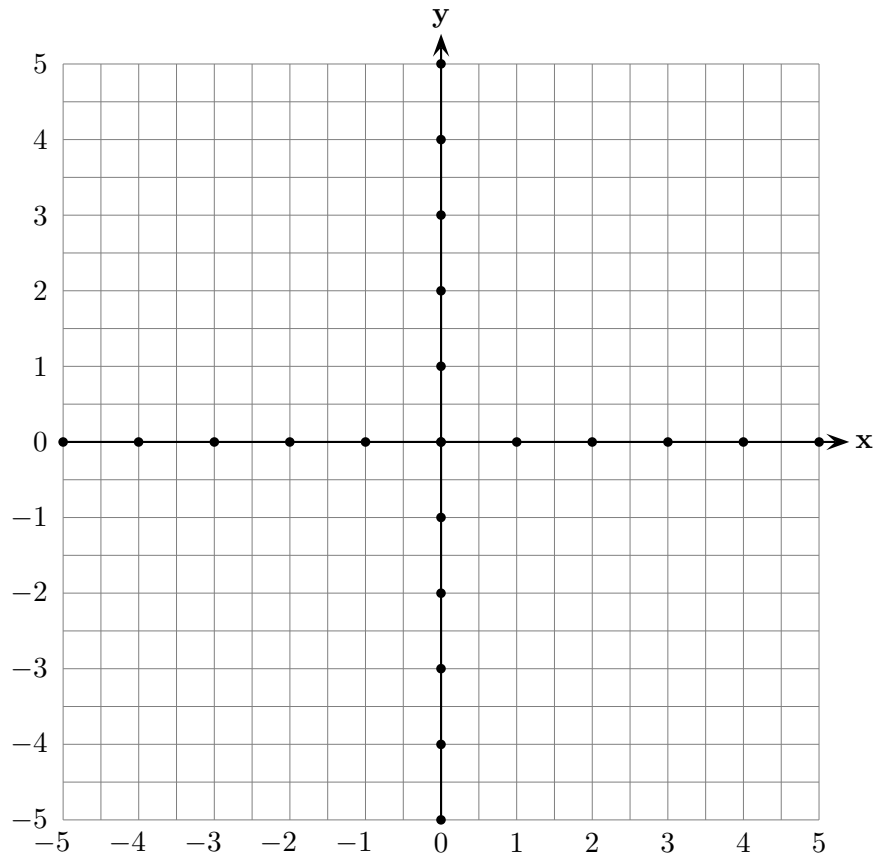
14. For each of the following lines find the slope, the x and y intercepts and graph them on the following grid. Make sure to mark clearly which line corresponds to which equation.

(a) $y = 2x - 3$

(b) $-3x + 2y = 6$

(c) $y = -2$

(d) $x = -3$



15. Factor completely: $x^2 - x - 6$.

16. Factor completely: $x^2 + 8x + 15$

17. Factor completely: $7x^2 - 63$.

18. Factor completely: $x^3 - x$.

19. Factor completely: $x^4 - 81$

20. Factor completely: $2x^2y^2 + 6xy^2 - 56y^2$