

Midterm review#3**Solve the inequality.**

1. $|x - 8| - 3 \leq 10$

Solve the equation if possible.

2. $-3(x - 2) = x$

3. $-5r - 6 + 4r = -r + 2$

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

5. $\frac{5}{3}(9 - w) = -10$

6. Write an equation of a line that is perpendicular to $y = -2x + 6$ and passes through $(-4, 7)$.

Solve.

7. $\frac{x + 2}{3} = \frac{x + 4}{5}$

Graph the inequality in a coordinate plane.

8. $x + 2y > 6$

9. $x - 1 \leq -3$

Graph the line that passes through the points. Then write an equation of the line in slope-intercept form.

10. $(6, 2), (8, -4)$

Graph the line that has the given intercepts.

11. x -intercept 3
 y -intercept: -1

Write an equation of the line with the given slope and y -intercept. Write the equation in slope-intercept form.

12. $m = 2, b = -1$

Solve the inequality. Graph the solution on a number line.

13. $\frac{2}{3}x + 2 \leq 4$

14. $-2x + 8 > 3x + 10$

15. $x - 3 < 10$

Solve the system using the method of your choice and tell how many solutions the system has.

16. $y = -4x - 3$
 $8x + 2y = 6$

Graph.

17. $3x - 2y - 2 = 0$

Evaluate.

18. $x^4 + 4(y - 2)$ when $y = 3$ and $x = 5$

19. $5y + x^2$ when $y = 3$ and $x = 5$

Graph to solve the linear system.

20. $6x + 2y = 16$
 $-2x + y = -2$

Solve the equation.

21. $|3x - 9| + 6 = 18$

Decide whether the statement is *true* or *false*.

22. $8 \leq y^2 + 3$ when $y = 3$

23. Rewrite $3x + 4y = 15 + 6y$ so that y is a function of x .

24. Decide whether the graphs of the two equations are parallel lines. *Explain* your answer.

$y = 4x + 3, y = -4x - 5$

Simplify.

25. $5(3 - z) - z$

Solve the linear system using elimination.

26. $x + 6y = 9$
 $-x + 4y = 11$

27. A piece of wire 42 feet long is to be divided into two sections so that one section is $\frac{2}{5}$ of the other section. What are the lengths of the two sections?

Graph the system of linear inequalities.

$x < 5$
28. $y \leq 6$
 $y > -2x + 3$

Solve for the indicated variable.

29. $C = 2\pi r, r$

Write an equation of the line that passes through the given point and has the given slope. Write the equation in slope-intercept form.

30. $(4, -2), m = \frac{1}{2}$