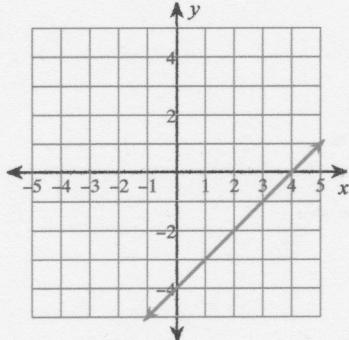


Summer Work

Write the slope-intercept form of the equation of each line.

1)



2) $3x - 4y = -32$

Write the slope-intercept form of the equation of the line described.

3) through: $(-4, 2)$, slope = $-\frac{3}{2}$

4) through: $(-2, 4)$, parallel to $y = -\frac{5}{2}x + 1$

Write the point-slope form of the equation of the line described.

5) through: $(1, -3)$, slope = -7

6) through: $(-2, 5)$ and $(0, -4)$

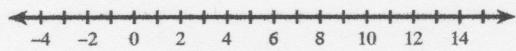
Solve each equation.

7) $-2|x - 3| = -4$

8) $|2n - 9| + 9 = 18$

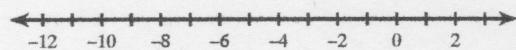
Solve the inequality and graph its solution.

$$9) \frac{|-5 + p|}{8} < 1$$



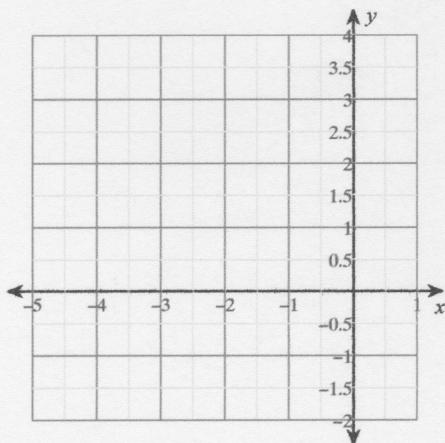
Solve the compound inequality and graph its solution.

$$10) 4p > -8 \text{ or } \frac{p}{4} < -2$$



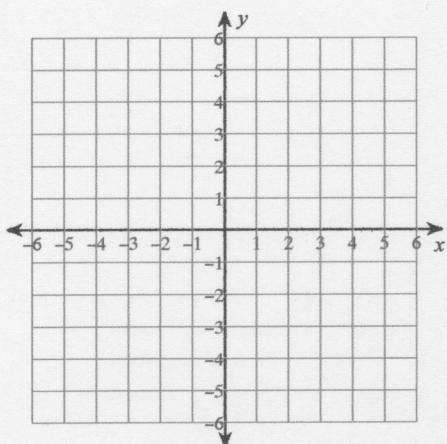
Sketch the graph of the inequality.

$$11) y \leq x^2 + 4x + 3$$

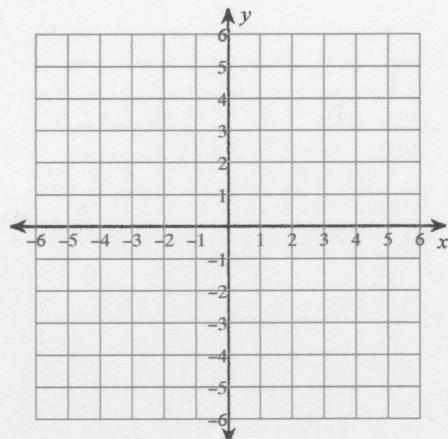


Sketch the graph of each line.

12) $y = -\frac{2}{5}x - 4$



13) $2x + y = -5$



Evaluate each function.

14) $h(a) = 2a + 2$; Find $h(-5)$

15) $h(n) = -3 \cdot 3^{3n}$; Find $h(4n)$

16) $h(t) = t + \frac{3}{2}$; Find $h(0)$

17) $p(x) = \left| -\frac{1}{2}x \right|$; Find $p\left(-\frac{10}{9}\right)$

18) $g(a) = 3a + 2$; Find $g(-2a)$

19) $g(a) = 2a - 5$; Find $g(-4a)$

Perform the indicated operation.

20) $f(n) = 3n^2 + 5$
 $g(n) = 4n + 2$
Find $f(n) - g(n)$

21) $f(n) = 3n - 2$
 $g(n) = n^2 - 3$
Find $f(n) \cdot g(n)$

22) $g(a) = a^2 - a$
 $h(a) = 3a - 3$
Find $g(a) + h(a)$

23) $h(a) = -a - 2$
 $g(a) = 4a - 4$
Find $h(a) - 2g(a)$

24) $g(x) = x - 4$
 $f(x) = x^3 - 4x$
Find $g(f(2))$

25) $g(n) = 4n + 1$
 $h(n) = n^3 + 2n$
Find $g(h(n))$

Solve each equation by factoring.

26) $2x^2 - 14x + 6 = 6$

27) $7b^2 = 51b - 14$

Solve each equation by taking square roots.

28) $x^2 = 64$

29) $100k^2 + 6 = 10$

Solve each equation with the quadratic formula.

$$30) \ 8x^2 - x - 1 = 0$$

$$31) \ n^2 - 100 + 12n = 12n$$

$$32) \ 9x^2 + 10x + 1 = x - 3$$

Solve each equation.

$$33) \ 256 = n^{\frac{4}{3}}$$

$$34) \ 64 = (k + 17)^{\frac{3}{2}}$$

Simplify.

$$35) \ (1000b^6)^{\frac{4}{3}}$$

Write each expression in radical form.

$$36) \ (7x)^{\frac{4}{3}}$$

Write each expression in exponential form.

$$37) \frac{1}{(\sqrt[3]{6p})^5}$$

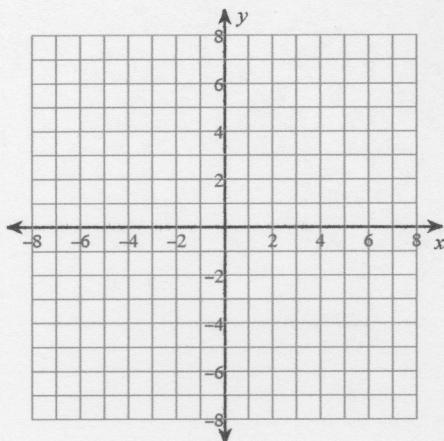
Simplify each expression.

$$38) \frac{9}{n+5} \cdot \frac{3n^2 + 15n}{9}$$

$$39) \frac{x^2 + 6x - 16}{x^2 - 4x - 45} + \frac{x^2 - 64}{x - 9}$$

Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptote, domain and range of the rational function. Then sketch the graph.

$$40) f(x) = \frac{x^2 - x}{-x^2 + 5x - 4}$$



Evaluate each limit.

$$41) \lim_{x \rightarrow 0} (x - 4)$$

$$42) \lim_{x \rightarrow 3} -\sqrt[3]{-x + 3}$$

$$43) \lim_{x \rightarrow -2} -\sqrt{-2x + 3}$$

$$44) \lim_{x \rightarrow -2} \frac{x + 7}{x^2 + 7x + 12}$$

$$45) \lim_{x \rightarrow 1} \frac{\sqrt{x + 15} - 4}{x - 1}$$

$$46) \lim_{x \rightarrow 0} \frac{1 - \sin\left(\frac{\pi}{2} + x\right)}{x}$$

$$47) \lim_{x \rightarrow -3} f(x), f(x) = \begin{cases} x^2 + 8x + 14, & x \neq -3 \\ 4, & x = -3 \end{cases}$$

$$48) \lim_{x \rightarrow -3} \frac{x^2 - 9}{x + 3}$$

$$49) \lim_{x \rightarrow -\infty} (x^4 - x^3 - 3x^2 + 4)$$

$$50) \lim_{x \rightarrow -\infty} (-x^5 + 3x^3 - x + 4)$$

$$51) \lim_{x \rightarrow -\infty} 2x \cos \frac{1}{x}$$

$$52) \lim_{x \rightarrow -\infty} \frac{12}{x^2 + 3}$$

$$53) \lim_{x \rightarrow -1^+} -\frac{3x}{x + 1}$$

$$54) \lim_{x \rightarrow -1^+} \frac{x + 2}{x^2 + 3x + 2}$$