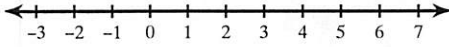


Review Ch 1 & 2

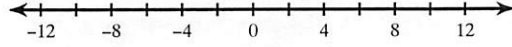
Date _____ Period _____

Solve each of the following inequalities. Graph the solution and write your answer in interval notation.

1) $12 - 5m \leq m + 6$



2) $-86 \leq 4 + 9n < 94$



3) $x^2 - 2x > 8$

4) $3x^2 > -16x + 12$

5) $5|x + 1| \leq 15$

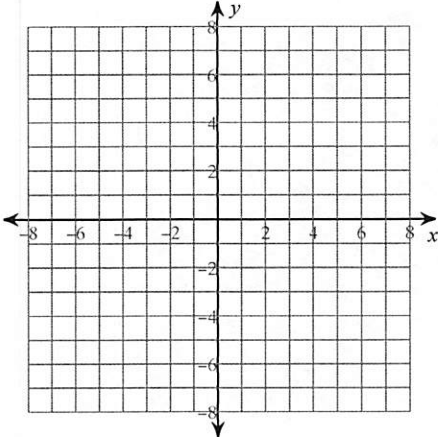
6) $|x + 4| - 7 > -2$

7) $\frac{2x - 5}{x + 1} < 0$

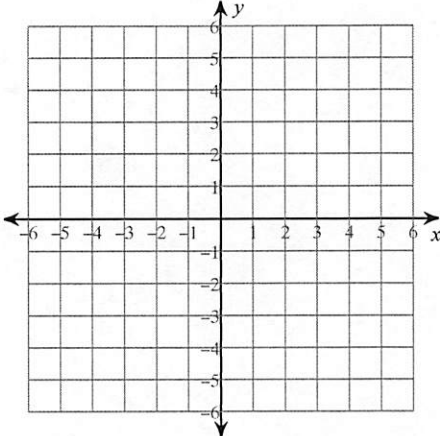
8) $\frac{x - 6}{x - 4} > 3$

Graph each of the following equations:

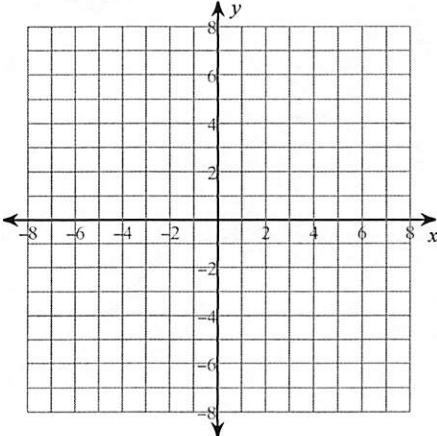
9) $(x + 2)^2 + (y + 3)^2 = 9$



10) $x = -5$



11) $3x + y + 4 = 0$



Identify the center and radius of each.

12) $x^2 + y^2 - 4x + 24y + 144 = 0$

13) $x^2 + y^2 - 24x - 6y + 149 = 0$

14) $x^2 + y^2 - 12x - 28y + 216 = 0$

Find the symmetry of each of the following equations. Show how you use the symmetry tests to find your answers.

15) $xy = 3$

16) $y = -2x + 1$

17) $y = x^2 - 3$

18) $y = x$

19) $y = -3(x + 1)^2$

20) $y = x^3 + 2x - 4$

Find the slope of the line through P and Q.

21) P(5, 2) and Q(-10, -3)

22) P(7, 8) and Q(7, -9)

Write the general form of the equation of each line.

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

24) through: $(3, 4)$, slope = $\frac{8}{3}$

25) x-intercept $(3, 0)$ and y-intercept $(0, 9)$

26) passes through $(4, -13)$ and parallel to the y-axis.

27) passes through $(-2, -11)$ and perpendicular to the line passing through $(1, 1)$ and $(5, -1)$

28) passes through $(0, 6)$ and parallel to the line $2x + 3y + 4 = 0$

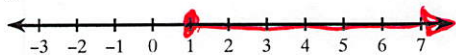
29) At the surface of the ocean, the water pressure is the same as the air pressure above the water, 15 lb/in². Below the surface the water pressure increases by 4.34 lb/in² for every 10 feet of descent.

- Find an equation for the relationship between pressure and depth below the ocean surface.
- What do the slope and y-intercept represent?
- At what depth is the pressure 100 lb/in²

Review Ch 1 & 2

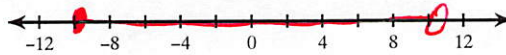
Solve each of the following inequalities. Graph the solution and write your answer in interval notation.

1) $12 - 5m \leq m + 6$



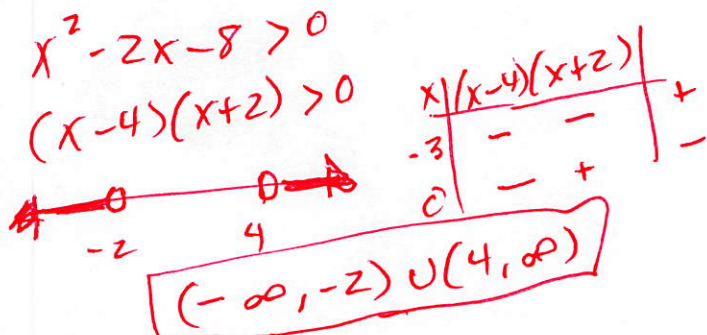
$-6m \leq -6$
 $m \geq 1$
 $[1, \infty)$

2) $-86 \leq 4 + 9n < 94$

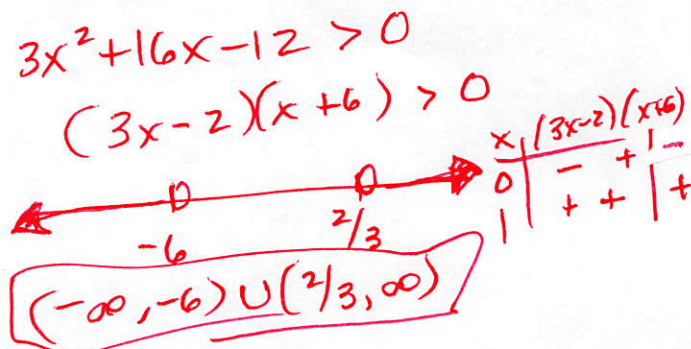


$-90 \leq 9n < 90$
 $-10 \leq n < 10$
 $[-10, 10)$

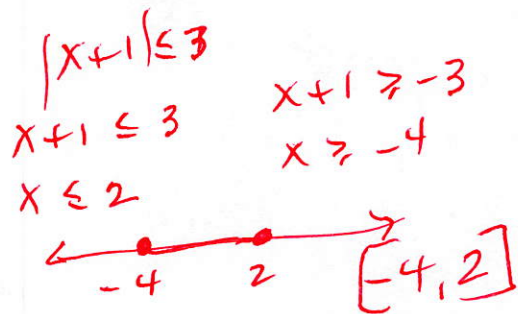
3) $x^2 - 2x > 8$



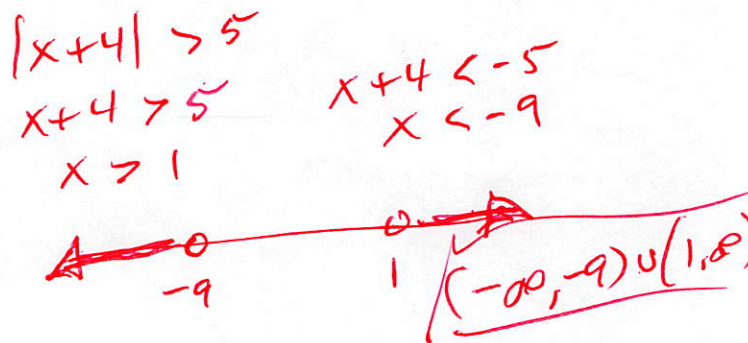
4) $3x^2 > -16x + 12$



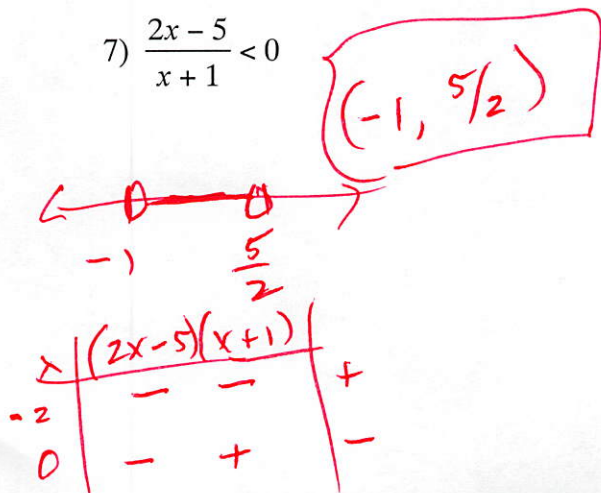
5) $5|x+1| \leq 15$



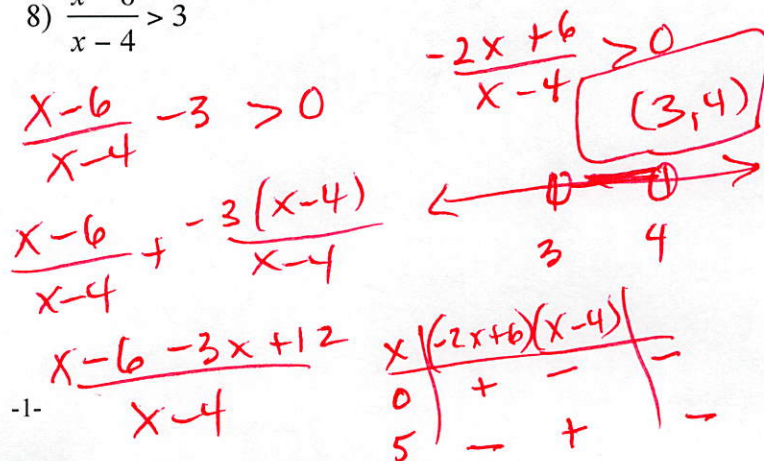
6) $|x+4| - 7 > -2$



7) $\frac{2x-5}{x+1} < 0$

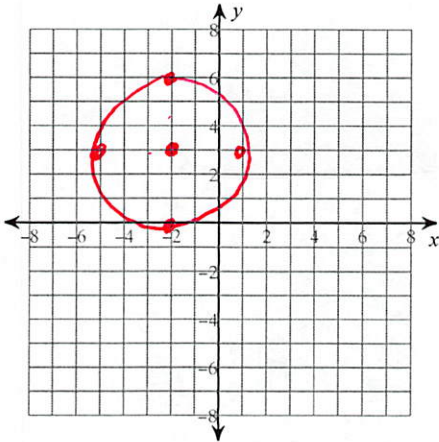


8) $\frac{x-6}{x-4} > 3$

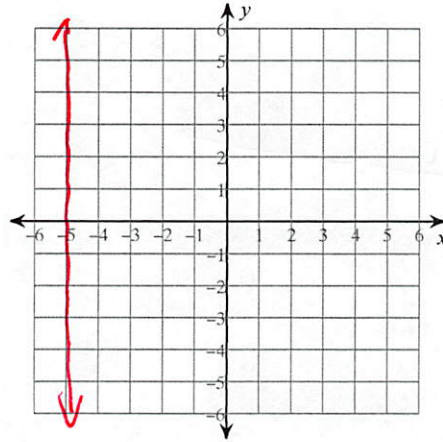


Graph each of the following equations:

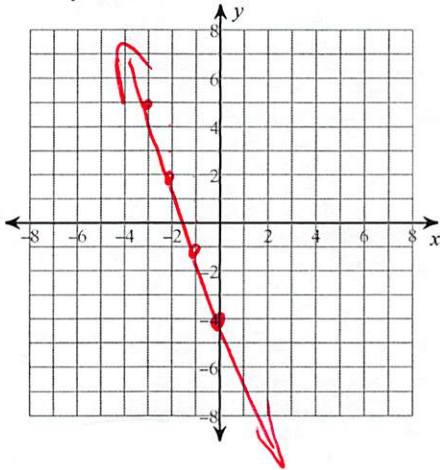
9) $(x + 2)^2 + (y + 3)^2 = 9$



10) $x = -5$



11) $3x + y + 4 = 0$



$$m = -\frac{3}{1}$$

$$b = -4$$

Identify the center and radius of each.

12) $x^2 + y^2 - 4x + 24y + 144 = 0$

$$\begin{aligned}
 &x^2 - 4x \quad y^2 + 24y \quad = -144 \\
 &x^2 - 4x + 4 + y^2 + 24y + 144 \quad +4 \quad +144 \\
 &(x-2)^2 + (y+12)^2 = 4 \\
 &\boxed{C(2, -12) \quad r = 2}
 \end{aligned}$$

14) $x^2 + y^2 - 12x - 28y + 216 = 0$

$$\begin{aligned}
 &C(6, 14) \\
 &r = 4
 \end{aligned}$$

13) $x^2 + y^2 - 24x - 6y + 149 = 0$

$$\begin{aligned}
 &C(12, 3) \\
 &r = 2
 \end{aligned}$$

Find the symmetry of each of the following equations. Show how you use the symmetry tests to find your answers.

15) $xy = 3$

$$\begin{aligned}
 &(-x)(-y) = 3 \\
 &xy = 3 \\
 &\text{origin}
 \end{aligned}$$

16) $y = -2x + 1$

No sym.

17) $y = x^2 - 3$

$$\begin{aligned}
 &y = (-x)^2 - 3 \\
 &y = x^2 - 3 \\
 &\text{Sym on y-axis}
 \end{aligned}$$

18) $y = x$

$$\begin{aligned}
 &-y = -x \\
 &\text{origin}
 \end{aligned}$$

19) $y = -3(x+1)^2$

No sym.

20) $y = x^3 + 2x - 4$

No sym.

Find the slope of the line through P and Q.

21) P(5, 2) and Q(-10, -3)

$$\left[\frac{1}{3} \right]$$

22) P(7, 8) and Q(7, -9)

undefined

Write the general form of the equation of each line.

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

24) through: $(3, 4)$, slope = $\frac{8}{3}$

$$y + 2 = \frac{3}{2}(x - 2)$$

$$y + 2 = \frac{3}{2}x - 3$$

$$2(y = \frac{3}{2}x - 5)$$

$$2y = 3x - 10$$

$$3x - 2y - 10 = 0$$

$$y - 4 = \frac{8}{3}(x - 3)$$

$$\frac{8}{3}x - 8$$

$$(y = \frac{8}{3}x - 4) \cdot 3$$

$$3y = 8x - 12$$

$$8x - 3y - 12 = 0$$

25) x-intercept $(3, 0)$ and y-intercept $(0, 9)$

26) passes through $(4, -13)$ and parallel to the y-axis.

$$\frac{9 - 0}{0 - 3} = \frac{9}{-3} = -3$$

$$m = \text{und.}$$

$$y = -3x + 9$$

$$x = 4$$

$$3x + y - 9 = 0$$

27) passes through $(-2, -11)$ and perpendicular to the line passing through $(1, 1)$ and $(5, -1)$

$$\frac{-1 - 1}{5 - 1} = \frac{-2}{4} = -\frac{1}{2}$$

28) passes through $(0, 6)$ and parallel to the line $2x + 3y + 4 = 0$

$$y = 2x - 7$$

$$m = -\frac{2}{3}$$

$$2x - y - 7 = 0$$

$$(y = -\frac{2}{3}x + 6) \cdot 3$$

$$3y = -2x + 18$$

$$2x + 3y - 18 = 0$$

29) At the surface of the ocean, the water pressure is the same as the air pressure above the water, 15 lb/in². Below the surface the water pressure increases by 4.34 lb/in² for every 10 feet of descent.

a. Find an equation for the relationship between pressure and depth below the ocean surface.

b. What do the slope and y-intercept represent?

c. At what depth is the pressure 100 lb/in²?

$$P = .434d + 15$$

Slope is how much the pressure increases per one foot of depth

y-int: initial pressure at surface

$$100 = .434d + 15$$

$$85 = .434d$$

$$d = 195.85 \text{ ft}$$