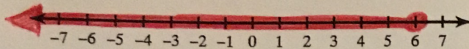


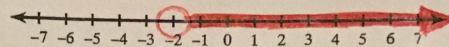
Midterm Review 2018 - Unit 3

Draw a graph for each inequality.

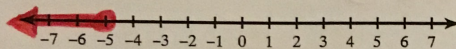
1) $r \leq 6$



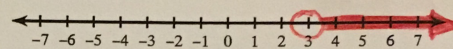
2) $-2 < x$



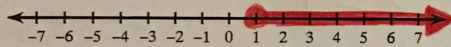
3) $b \leq -5$



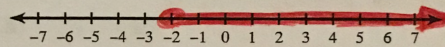
4) $a > 3$



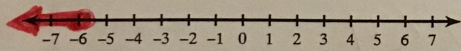
5) $1 \leq m$



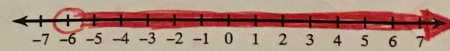
6) $n \geq -2$



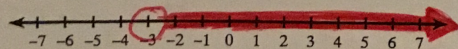
7) $k \leq -6$



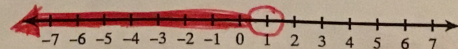
8) $-6 < x$



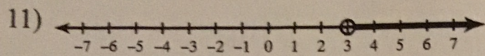
9) $-3 < x$



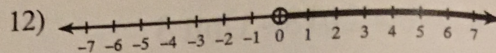
10) $1 > b$



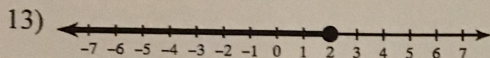
Write an inequality for each graph.



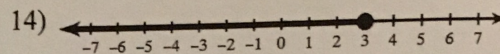
$$x > 3$$



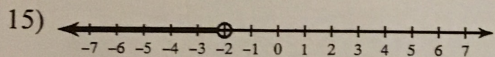
$$x > 0$$



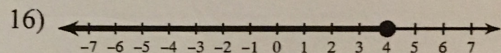
$$x \leq 2$$



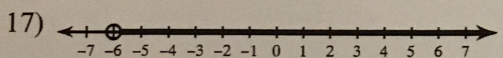
$$x \leq 3$$



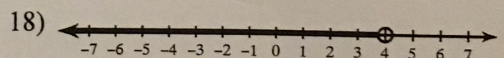
$$x < -2$$



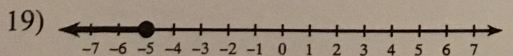
$$x \leq 4$$



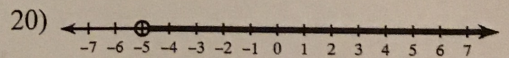
$$x > -6$$



$$x < 4$$



$$x \leq -5$$



$$x > -5$$

Solve each inequality.

21) $-16 < -5 + m$
 $+5 \quad +5$

$-11 < m$

22) $p - 11 > -2$
 $+11 \quad +11$

$p > 9$

23) $r + 17 > 18$
 $-17 \quad -17$

$r > 1$

24) $-25 > x - 7$
 $+7 \quad +7$

$-18 > x$

25) $-15n \leq -30$
 $-15 \quad -15$

$n \geq 2$

FLIP SIGN

26) $-18 > 6x$
 $\div 6 \quad \div 6$

$-3 > x$

27) $\frac{n}{14} > -17$
 $\times 14 \quad \times 14$

$n > 238$

28) $-50 < -10r$
 $-10 \quad -10$

$5 > r$

FLIP SIGN

29) $\frac{n}{4} - 10 \leq -6$
 $+10 \quad +10$

$\frac{n}{4} \leq 4$
 $\times 4 \quad \times 4$

$n \leq 16$

30) $-9x + 5 \geq 122$
 $-5 \quad -5$

$-9x \geq 117$
 $-9 \quad -9$

$x \leq -13$

FLIP SIGN

31) $0 > \frac{3+n}{4}$
 $\times 4 \quad \times 4$

$0 > 3+n$
 $-3 \quad -3$

$-3 > n$

32) $1 \leq \frac{v-9}{8}$
 $\times 8 \quad \times 8$

$8 \leq v-9$
 $+9 \quad +9$

$17 \leq v$

$$33) 32 \leq -4(5+k)$$

$$32 \leq -20 + -4k$$

$$\begin{array}{r} 52 \leq -4k \\ -4 \quad -4 \end{array}$$

$$\boxed{-13 \geq k}$$

$$35) 1 < \frac{2+v}{4}$$

$$\begin{array}{r} 4 < 2+v \\ -2 \quad -2 \end{array}$$

$$\boxed{2 < v}$$

$$34) 132 \geq -6(n-3)$$

$$132 \geq -6n + 18$$

$$\begin{array}{r} 114 \geq -6n \\ -6 \quad -6 \end{array}$$

$$\boxed{-19 \leq n}$$

$$36) \frac{r}{4} - 6 \geq -4$$

$$4 * \frac{r}{4} \geq 2 * 4$$

$$\boxed{r \geq 8}$$

FLIP
SIGN

Simplify each expression.

$$37) 9x + 10x$$

$$\boxed{19x}$$

$$38) 4x - 9x$$

$$\boxed{-5x}$$

$$39) 1 + 6n - 3n$$

$$\boxed{1 + 3n}$$

$$40) 9k - 5 + 8k + 10$$

$$\boxed{17k + 5}$$

$$41) 1 + 7x + x - 10$$

$$\boxed{8x - 9}$$

$$42) a - 3 + 7a + 5$$

$$\boxed{8a + 2}$$

$$43) 10(1 + 5k) + 6k$$

$$10 + 50k + 6k$$

$$\boxed{10 + 56k}$$

$$44) 9(5 - 2n) - 6$$

$$45 - 18n - 6$$

$$\boxed{-18n + 39}$$

$$45) 8(1 - 4m) - 9m$$

$$8 - 32m - 9m$$

$$\boxed{8 - 41m}$$

$$46) -5 + 4(1 + n)$$

$$-5 + 4 + 4n$$

$$\boxed{-1 + 4n}$$

$$47) -7(n - 1) - 4n$$

$$-7n + 7 - 4n$$

$$\boxed{-11n + 7}$$

$$48) -9(9x + 4) - 4$$

$$-81x + -36 - 4$$

$$\boxed{-81x + -40}$$

Solve each equation.

$$49) 5 + 3x - 7 = 10$$

$$3x + 2 = 10$$

$$\frac{3x = 12}{3}$$

$$\boxed{x = 4}$$

$$50) -6r + 6 + 2r = -22$$

$$-4r + 6 = -22$$

$$\frac{-4r = -16}{-4}$$

$$\boxed{r = 4}$$

$$51) 6 - 5x - 5 = -14$$

$$-5x = -14$$

$$\frac{-5x = -14}{-5}$$

$$\boxed{x = 3}$$

$$52) 1 + 6r - 7r = -6$$

$$-1r = -6$$

$$\frac{-1r = -6}{-1}$$

$$\boxed{r = 6}$$

$$53) -84 = 3(7 - 5x)$$

$$-84 = 21 - 15x$$

$$\frac{-105 = -15x}{-15}$$

$$\boxed{7 = x}$$

$$54) -6(x - 7) = 84$$

$$-6x + 42 = 84$$

$$\frac{-6x = 42}{-6}$$

$$\boxed{x = -7}$$

$$55) -6m + 8m = 1 - 7m - 1$$

$$2m = -7m$$

$$\frac{9m = 0}{9}$$

$$\boxed{m = 0}$$

$$56) 3 + n = 12 - 8n$$

$$9 + 9n = 12$$

$$\frac{9n = 9}{9}$$

$$\boxed{n = 1}$$

$$57) 1 + 5m = 7m - 5$$

$$\begin{array}{r} 1 = 2m + 5 \\ +5 \quad +5 \end{array}$$

$$\boxed{6 = 2m}$$

$$59) 3 + 4x = -4 + 5x$$

$$\begin{array}{r} 3 = -4 + 1x \\ +4 \quad +4 \end{array}$$

$$\boxed{7 = x}$$

$$58) -2 - 3n = 5n - 2$$

$$\begin{array}{r} -2 = 8n - 2 \\ +2 \quad +2 \end{array}$$

$$\begin{array}{r} 0 = 8n \\ \div 8 \quad \div 8 \end{array}$$

$$\boxed{0 = n}$$

$$60) 2 + 8x - 8x = -3 - x$$

$$\begin{array}{r} 2 = -3 - x \\ +3 \quad +3 \end{array}$$

$$\boxed{6 = x}$$

Solve each inequality.

$$61) 8 < -6k + 5k$$

$$\boxed{8 < k}$$

$$62) -13 \geq -7n - 6n$$

$$\begin{array}{r} -13 \geq -13n \\ -13 \quad -13 \end{array}$$

$$\boxed{1 \leq n}$$

$$63) 7x + 3x < 10$$

$$\begin{array}{r} 10x < 10 \\ \div 10 \quad \div 10 \end{array}$$

$$\boxed{x < 1}$$

$$64) -16 < -5v - 3v$$

$$\begin{array}{r} -16 < -8v \\ -8 \quad -8 \end{array}$$

$$\boxed{2 < v}$$

$$65) m - 2 \geq 16 - 8m$$

$$\begin{array}{r} 9m - 2 \geq 16 \\ +2 \quad +2 \end{array}$$

$$\begin{array}{r} 9m \geq 18 \\ \div 9 \quad \div 9 \end{array}$$

$$\boxed{m \geq 2}$$

$$67) -12 - 6x + 5x > x - 8x$$

$$-12 - x > x - 8x$$

$$\begin{array}{r} -12 + x > -7x \\ +x \quad +x \end{array}$$

$$\begin{array}{r} 12 > -6x \\ \div 6 \quad \div 6 \end{array}$$

$$\boxed{-2 < x}$$

$$66) -16 - 6n < 1 - 8n - 7$$

$$\begin{array}{r} -16 - 6n < -6 - 8n \\ +8n \quad +8n \end{array}$$

$$\begin{array}{r} -16 + 2n < -6 \\ +16 \quad +16 \end{array}$$

$$\boxed{2n < 10}$$

$$\boxed{n < 5}$$

$$68) 5 + 8n < 6n + 3n + 8$$

$$\begin{array}{r} 5 + 8n < 9n + 8 \\ -9n \quad -9n \end{array}$$

$$\begin{array}{r} 5 + -1n < 8 \\ -5 \quad -5 \end{array}$$

$$\begin{array}{r} -1n < 3 \\ \div -1 \quad \div -1 \end{array}$$

$$\boxed{n > -3}$$