Algebra Two BM 1 Worksheet A

1 Solve $4n+3(n-5)=8$

$4n+3n-15=8$

$7n-15=8$

$+15 \quad +15$

$\frac{7n}{7}=\frac{23}{7}$

$n=\frac{23}{7}$

2 $x^3b+6b=-7$

$b(x^3+6)=-7$

$\frac{b(x^3+6)}{x^3+6}=\frac{-7}{x^3+6}$

$b=\frac{-7}{x^3+6}$

3 Which element? $5c+18<2c-6$

A. -8 no, $=$

B. -7 no, $>$

C. -9 ↓ $-7<-8$

D. 10 no, $>$

C

$5c+18<2c-6$

$-2c \quad -18 \quad -2c \quad -18$

$\frac{3c}{3}<\frac{-24}{3}$

$c<-8$

4 Solve $-\frac{1}{3}x-9>6$

$+9 \quad +9$

$(-3)-\frac{1}{3}x>15(-3)$

$x<-45$

5 $|4x-11|=9$

$4x-11=9$

$+11 \quad +11$

$\frac{4x}{4}=\frac{20}{4}$

$x=5$

$4x-11=-9$

$+11 \quad +11$

$\frac{4x}{4}=\frac{2}{4}$

$x=\frac{1}{2}$

6 $-4+2|x+1|=20$

$+4 \quad +4$

$2|x+1|=24$

$\frac{2}{2} \quad \frac{24}{2}$

$|x+1|=12$

$x+1=12$ $\quad$ $x+1=-12$

$-1 \quad -1$ $\quad$ $-1 \quad -1$

$x=11$ $\quad$ $x=-13$

7 $|3-2x| \geq 7$

$3-2x \geq 7$ $\quad$ $3-2x \leq -7$

$-3 \quad -3$ $\quad$ $-3 \quad -3$

$-2x \geq 4$ $\quad$ $-2x \leq -10$

$\frac{-2x}{-2} \geq \frac{4}{-2}$ $\quad$ $\frac{-2x}{-2} \leq \frac{-10}{-2}$

$x \leq -2$ $\quad$ $x \geq 5$

8 $(3)\left|\frac{x-6}{3}\right|>5(3)$

$|x-6|>15$

$x-6>15$ $\quad$ $x-6<-15$

$+6 \quad +6$ $\quad$ $+6 \quad +6$

$x>21$ $\quad$ $x<-9$

9 $\left|\frac{3x-1}{4}\right| \leq 2$

$(4)\frac{3x-1}{4} \leq 2(4)$ $\quad$ $(4)\frac{3x-1}{4} \geq -2(4)$

$3x-1 \leq 8$ $\quad$ $3x-1 \geq -8$

$+1 \quad +1$ $\quad$ $+1 \quad +1$

$\frac{3x}{3} \leq \frac{9}{3}$ $\quad$ $\frac{3x}{3} \geq \frac{-7}{3}$

$x \leq 3$ $\quad$ $x \geq -\frac{7}{3}$

10 $|x-3| \geq 5$

$x-3 \geq 5$ $\quad$ $x-3 \leq -5$

$+3 \quad +3$ $\quad$ $+3 \quad +3$

$x \geq 8$ $\quad$ $x \leq -2$

11 horizontal line thru $(3,-2)$

$x \quad y$

$y=\square$ $\quad$ $y=-2$

12 $\parallel$ to $y = \frac{2}{3}x - 5$

$y = \frac{2}{3}x + 7$

be could be ↑ anything, so long as m is $\frac{2}{3}$.

13 x-intercept of $3x - 5y = -30$

↳ $y = 0$ $\quad 3x - 5(0) = -30$

$\frac{3x}{3} = \frac{-30}{3}$

$x = -10$

$(-10, 0)$

14 slope of $4x - 7y = 3$

$-4x \quad -4x$

$\frac{-7y}{-7} = \frac{-4x}{-7} + \frac{3}{-7}$

$y = \frac{4}{7}x - \frac{3}{7}$

$m = \frac{4}{7}$ ↵

15 $m = -2$ thru $(4, -5)$ ↴

$x_1 \quad y_1$

$y - y_1 = m(x - x_1)$

$y - -5 = -2(x - 4)$

$y + 5 = -2(x - 4)$

$y + 5 = -2x + 8$

$-5 \quad -5$

$y = -2x + 3$

16 $(1, -6)$ and $(4, -2)$ ↴

$x_1 \quad y_1 \quad x_2 \quad y_2$

$m = \frac{-2 - -6}{4 - 1}$

$= \frac{-2 + 6}{3}$

$= \frac{4}{3}$

$y - y_1 = m(x - x_1)$

$y - -6 = \frac{4}{3}(x - 1)$

$y + 6 = \frac{4}{3}x - \frac{4}{3}$

$-6 \quad -6$

$y = \frac{4}{3}x - \frac{22}{3}$

$-\frac{4}{3} - \frac{18}{3} = \frac{-22}{3}$

17 thru $(-8, 7)$ and $\perp$ to $y = 4x - 5$

$x_1 \quad y_1$

$m_\perp = -\frac{1}{4}$

$y - y_1 = m(x - x_1)$

$y - 7 = -\frac{1}{4}(x - -8)$

$y - 7 = -\frac{1}{4}(x + 8)$

$y - 7 = -\frac{1}{4}x - \frac{8}{4}$

$y - 7 = -\frac{1}{4}x - 2$

$+7 \quad +7$

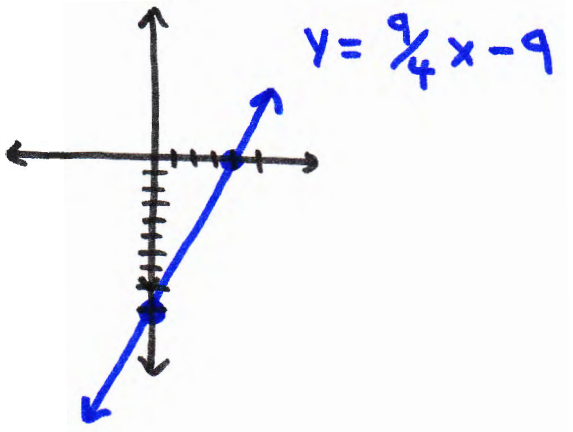
$y = -\frac{1}{4}x + 5$

18 Graph $9x - 4y = 36$

$-9x \quad -9x$

$\frac{-4y}{-4} = \frac{-9x}{-4} + \frac{36}{-4}$

$y = \frac{9}{4}x - 9$

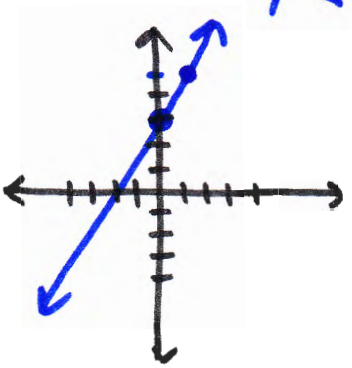


19 Graph $-6x + 3y < 9$

$+6x \quad +6x$

$\frac{3y}{3} < \frac{6x}{3} + \frac{9}{3}$

$y < 2x + 3$



20 Graph $y = -\frac{1}{4}x + 3$