

4

5-5

Bull's Eye
Working with Points and Lines

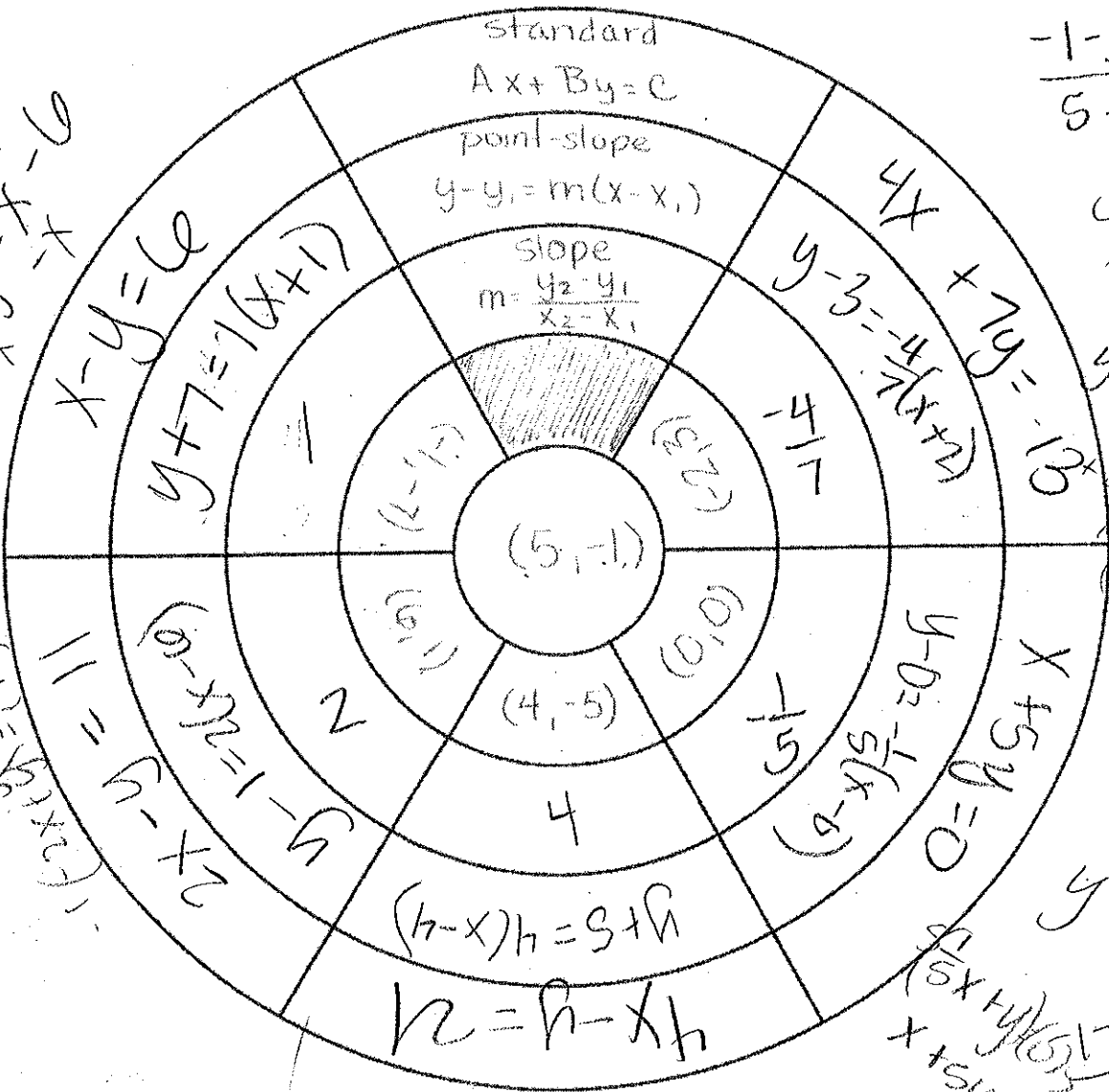
Name KWJ
Date _____ Hr _____

In the center of the Bull's Eye, there is a coordinate pair. In the first ring, there is another coordinate pair. In the following ring, find the slope of the line between the two points. In the next ring, write the point-slope form of the line between the two points, and in the final ring, write the standard form of the line.

$(-x+y) = -6$
 $x-y=0$

$y+7 = x+4$
 $-x+y = -3$

$2x = 12$
 $x = 6$
 $5x = 30$
 $5x - 2y = 10$



$\frac{-1-3}{5+2} = \frac{-4}{7}$

$y-3 = -\frac{4}{7}x - \frac{8}{7}$
 $+3$
 $y = -\frac{4}{7}x - \frac{8}{7} + 3$

$2x = 12$
 $x = 6$
 $5x = 30$
 $5x - 2y = 10$

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

$\frac{-1+7}{5+1} = \frac{6}{6} = 1$
 $(4x+1) - (2x-2) = 6+x+3$
 $2x-1 = 6+x+3$
 $x = 5$
 $4x-1 = 20-1 = 19$

$\frac{-1-1}{5-0} = \frac{-2}{5} = -\frac{2}{5}$

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

Eq. in all 3 Forms

$$(11) (-5, 2) m = \frac{2}{5}$$

$$(14) (0, \frac{1}{2}) m = \frac{9}{4}$$

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

$$y - 2 = \frac{2}{5}x + 2$$

$$y = \frac{2}{5}x + 4$$

$$y = \frac{9}{4}x + \frac{1}{2}$$

$$-4\left(-\frac{9}{4}x + y = \frac{1}{2}\right)$$

$$\boxed{9x - 4y = -2 \text{ (e.p.)}}$$

$$-5 \left(-\frac{2}{5}x + y = 4\right)$$

$$\boxed{2x - 5y = -20 \text{ (k.l.)}}$$

$$(15) \left(\frac{10}{3}, -9\right) m = 0 \left(\longleftrightarrow\right)$$

$$(12) (-6, -1) m = -4$$

$$\boxed{y = -9}$$

$$y + 1 = -4(x + 6)$$

$$y + 1 = -4x - 24$$

$$y = -4x - 25$$

$$\boxed{4x + y = -25 \text{ (o.e.)}}$$

$$(13) (3, -3) m = -\frac{3}{8}$$

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

$$y + 3 = -\frac{3}{8}x + \frac{9}{8}$$

$$y = -\frac{3}{8}x - \frac{15}{8}$$

$$8 \left(\frac{3}{8}x + y = -\frac{15}{8}\right)$$

$$\boxed{3x + 8y = -15 \text{ (d.T.)}}$$

8 Standard Form Practice

① $3x - 5y = -20$

$3x = -20$

$x = -20/3$

$-5y = -20$

$y = 4$

② $-5x + 3y = 7.5$

$-5x = 7.5$

$x = -1.5$

$3y = 7.5$

$y = 2.5$

③ $-4x + y = -12$

$-4x = 12$

$x = -3$

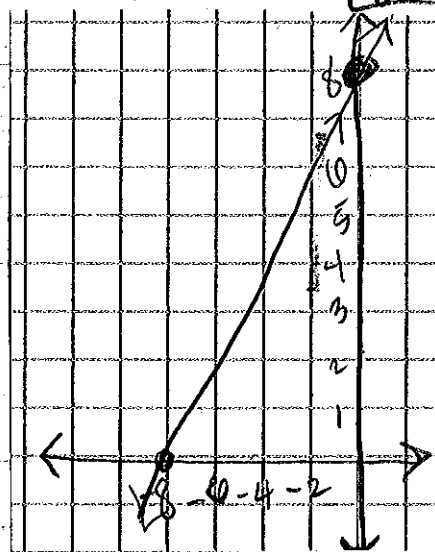
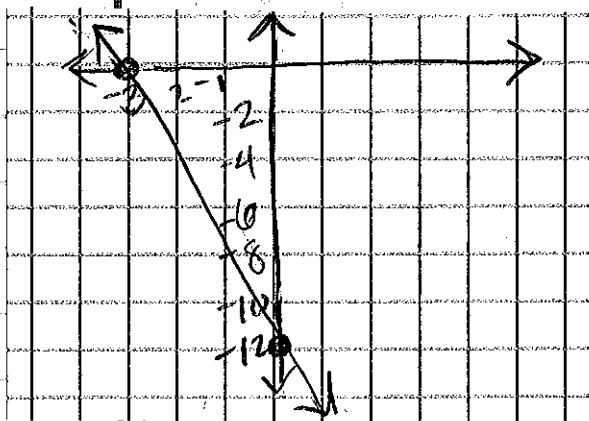
$y = 12$

④ $x - y = -8$

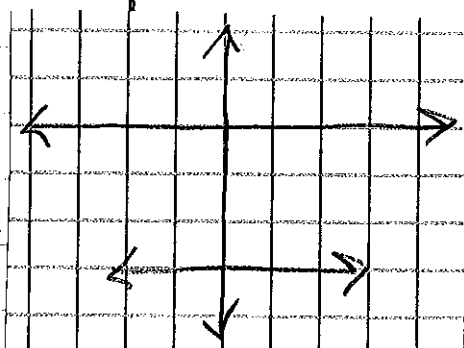
$x = -8$

$-y = -8$

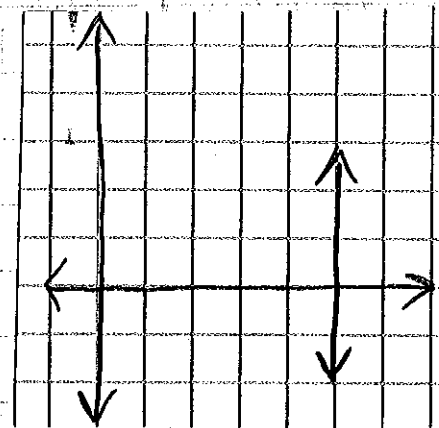
$y = 8$



⑤ $y = -3$



⑥ $x = 5$



⑦ $(9, 1) (15, 5)$

$\frac{5-1}{15-9} = \frac{4}{6} = \frac{2}{3}$

$y - 1 = \frac{2}{3}(x - 9)$
 $y - 1 = \frac{2}{3}x - 6$
 $y = \frac{2}{3}x - 5$

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

$2x - 3y = 15$

$$\begin{aligned} \textcircled{8} \quad y + 3 &= 4(x - 1) \\ y + 3 &= 4x - 4 \\ y &= 4x - 7 \\ -1 \quad (-4x + y &= -7) \\ \hline 4x - y &= 7 \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad D &\rightarrow 0 \leq x \leq 50 \\ R &\rightarrow 0 \leq y \leq 125 \end{aligned}$$

Use x- and y-
intercepts to find
maximums

$$\begin{aligned} \textcircled{9} \quad y &= \frac{1}{4}x - \frac{5}{6} \\ -12 \quad (-\frac{1}{4}x + y &= -\frac{5}{6}) \\ \hline 3x - 12y &= 10 \end{aligned}$$

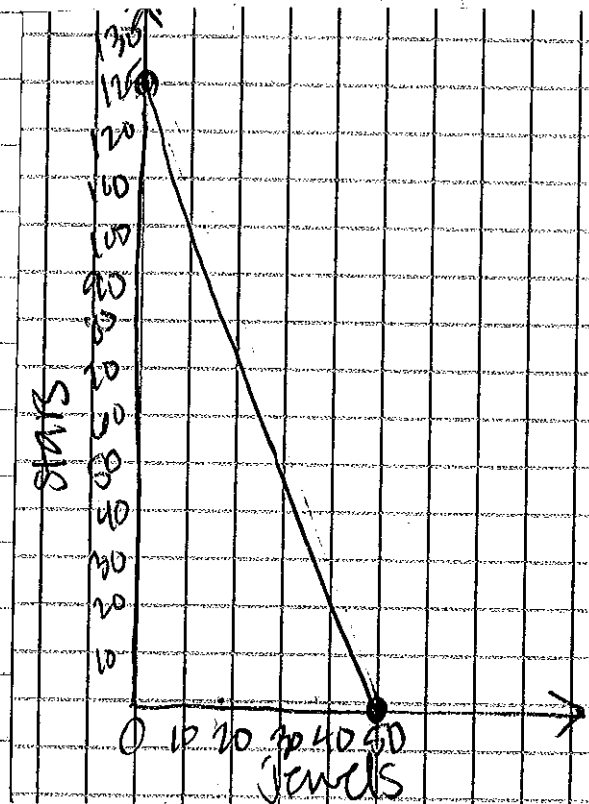
$$\begin{aligned} \textcircled{10} \quad y + 2 &= \frac{2}{3}(x + 4) \\ y + 2 &= \frac{2}{3}x + \frac{8}{3} \\ y &= \frac{2}{3}x + \frac{2}{3} \\ -3 \quad (-\frac{2}{3}x + y &= \frac{2}{3}) \\ \hline 2x - 3y &= -2 \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad x &= \text{t-shirts} \\ y &= \text{sweat shirts} \end{aligned}$$

$$10x + 15y = 120$$

$$\begin{aligned} \textcircled{12} \quad x &= \text{jewels} \\ y &= \text{stars} \\ 5x + 2y &= 250 \end{aligned}$$

$$\begin{aligned} 5x &= 250 & 2y &= 250 & (50, 0) & (5, 125) \\ x &= 50 & y &= 125 & (125, 0) & \end{aligned}$$



#9 Word Problems

$$1. \begin{array}{r} x = 2y - 3 \\ -2y \quad -2y \\ \hline x - 2y = -3 \end{array}$$

$$\boxed{x - 2y = -3}$$

$$2. \begin{array}{r} y = 9x + \frac{1}{2} \\ -9x \quad -9x \\ \hline -2(-9x + y = \frac{1}{2}) \\ 18x - 2y = -1 \end{array}$$

$$\boxed{18x - 2y = -1}$$

$$3. \begin{array}{r} y = \frac{5}{2}x + 9 \\ -\frac{5}{2}x \quad -\frac{5}{2}x \\ \hline -2(-\frac{5}{2}x + y = 9) \\ 5x - 2y = -18 \end{array}$$

$$\boxed{5x - 2y = -18}$$

$$4. \begin{array}{r} 3x + 9 = \frac{7}{2}y \\ -\frac{7}{2}y \quad -9 \quad -\frac{7}{2}y \quad -9 \\ \hline 2(3x - \frac{7}{2}y = -9) \\ 6x - 7y = -18 \end{array}$$

$$\boxed{6x - 7y = -18}$$

$$5. \begin{array}{r} x - 5 = 0 \\ +5 \quad +5 \\ \hline x = 5 \end{array}$$

$$\boxed{x = 5}$$

$$6. \begin{array}{r} 4x - 3y - 12 = 0 \\ +12 \quad +12 \\ \hline 4x - 3y = 12 \end{array}$$

$$\boxed{4x - 3y = 12}$$

$$7. \begin{array}{r} (-8, 3) \quad m = 2 \\ 3 = 2(-8) + b \\ 3 = -16 + b \\ 19 = b \\ y = 2x + 19 \\ -2x \quad -2x \\ \hline -1(-2x + y = 19) \\ 2x - y = -19 \end{array}$$

$$\boxed{2x - y = -19}$$

$$8. \begin{array}{r} (10, 0) \quad m = 7 \\ 0 = 7(10) + b \\ 0 = 70 + b \\ -64 = b \\ y = 7x - 64 \\ -7x \quad -7x \\ \hline -1(-7x + y = -64) \\ 7x - y = 64 \end{array}$$

$$\boxed{7x - y = 64}$$

$$9. \begin{array}{r} (3, -2) \quad m = 5 \\ -2 = 5(3) + b \\ -2 = 15 + b \\ -17 = b \\ y = 5x - 17 \\ -5x \quad -5x \\ \hline -1(-5x + y = -17) \\ 5x - y = 17 \end{array}$$

$$\boxed{5x - y = 17}$$

$$10. \begin{array}{r} (1, 4) \quad (5, 7) \\ \frac{7-4}{5-1} = \frac{3}{4} \\ 4 = \frac{3}{4}(1) + b \\ 4 = \frac{3}{4} + b \\ \frac{13}{4} = b \\ y = \frac{3}{4}x + \frac{13}{4} \\ -\frac{3}{4}x \quad -\frac{3}{4}x \\ \hline -4(\frac{3}{4}x + y = \frac{13}{4}) \\ 3x - 4y = -13 \end{array}$$

$$\boxed{3x - 4y = -13}$$

$$11. \begin{array}{r} (-4, 1) \quad (2, -5) \\ \frac{-5-1}{2-(-4)} = \frac{-6}{6} = -1 \\ 1 = -1(-4) + b \\ 1 = 4 + b \\ -3 = b \\ y = -1x - 3 \\ \hline x + y = -3 \end{array}$$

$$\boxed{x + y = -3}$$

$$12. \begin{array}{r} (0, 0) \quad (2, 0) \\ m = 0 \\ y = 0 \end{array}$$

$$\boxed{y = 0}$$

13. h = hamburger
 c = chicken

$$2h + 3c = 60$$

x-int. ($c=0$)

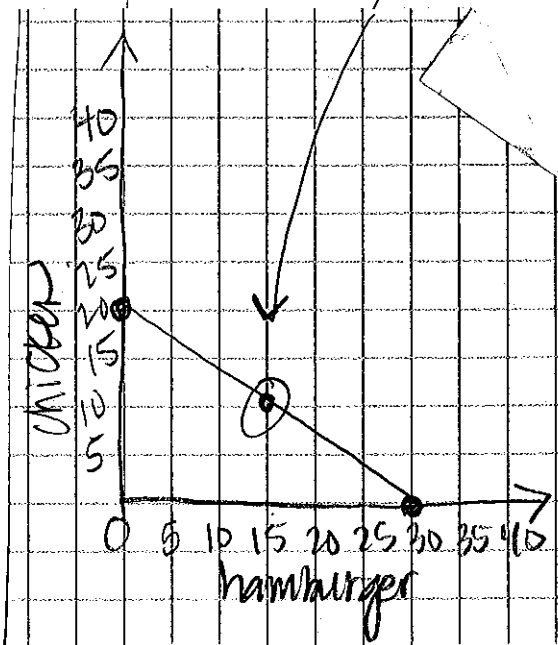
$$\begin{array}{r} 2h = 60 \\ \underline{2} \quad \underline{2} \\ h = 30 \end{array}$$

y-int. ($h=0$)

$$\begin{array}{r} 3c = 60 \\ \underline{3} \quad \underline{3} \\ c = 20 \end{array}$$

$$\begin{array}{r} 2(15) + 3c = 60 \\ -30 \quad -30 \\ \hline 3c = 30 \end{array}$$

$$c = 10 \text{ lbs}$$



14. type 1 = x (sq)
type 2 = y (sq)

$$4x + 6y = 48$$

x-int. ($y=0$)

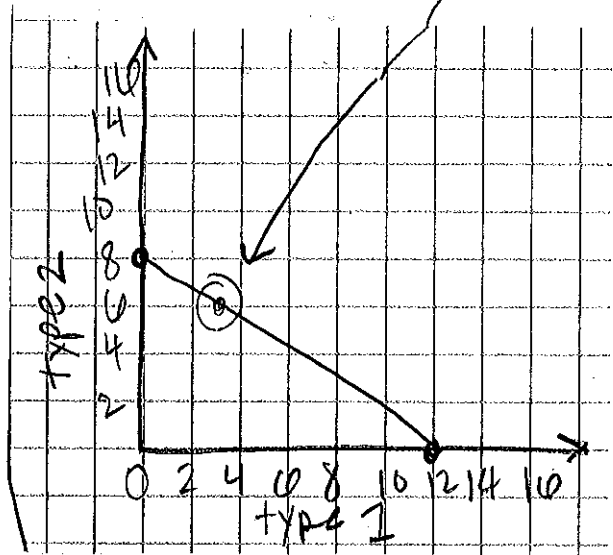
$$\begin{array}{r} 4x = 48 \\ \underline{4} \quad \underline{4} \\ x = 12 \end{array}$$

y-int. ($x=0$)

$$\begin{array}{r} 6y = 48 \\ \underline{6} \quad \underline{6} \\ y = 8 \end{array}$$

$$\begin{array}{r} 4(3) + 6y = 48 \\ -12 \quad -12 \\ \hline 6y = 36 \end{array}$$

$$y = 6 \text{ lbs}$$



$$x = 10 - 02 \text{ jar}$$

$$y = 12 - 02 \text{ jar}$$

$$10x + 12y = 240$$

110.

x = thistle seed

y = sunflower seed

$$2x + 1.50y = 30$$

$$\begin{array}{l} x\text{-int} \\ 2x = 30 \\ \frac{2x}{2} = \frac{30}{2} \end{array}$$

$$x = 15$$

$$\begin{array}{l} y\text{-int} \\ 1.50y = 30 \\ \frac{1.50y}{1.50} = \frac{30}{1.50} \end{array}$$

$$y = 20$$

