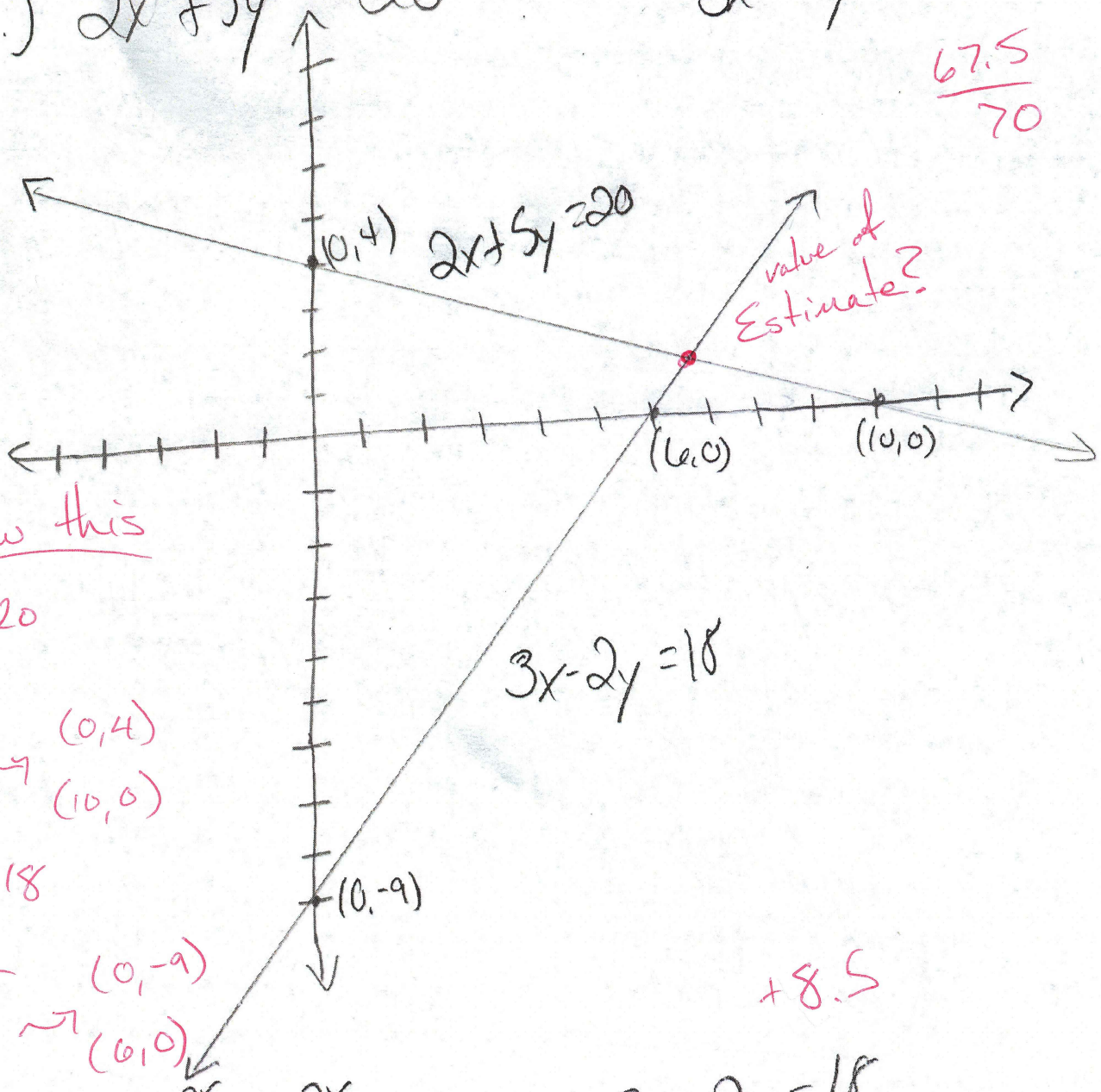
Kandie Clark MAT 1340 W.P. #4

7a.) $2x+5y=20$ $3x-2y=18$

67.5/70



Show this

$2x+5y=20$

x	y	
0	4	(0,4)
10	0	(10,0)

$3x-2y=18$

x	y	
0	-9	(0,-9)
6	0	(6,0)

+8.5

7b.) $2x+5y=20$ $-2x$ $-2x$

$\frac{5y}{5}=\frac{20-2x}{5}$

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

Make sure your variable is on the correct side of the fraction.

$3x-2y=18$

$3x-2(4-\frac{2}{5}x)=18$

$3x-8+\frac{4}{5}x=18$ +8 +8

$\frac{5}{19}\cdot\frac{19}{5}x=26\cdot\frac{5}{19}$

$x=\frac{130}{19}$

Kendie Clark MAT 1340 WP #4

2b.) -continued looks like $\frac{2}{5x}$, but it is $\frac{2x}{5}$

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

$y = 4 - \frac{2}{5}\left(\frac{130}{19}\right)$

$y = 4 - \frac{260}{95}$

$x = \frac{130}{19}$

$y = \frac{24}{19}$

+10

2c.) $(2x + 5y = 20) \cdot -3$

$(3x - 4y = 18) \cdot 2$

$-6x - 15y = -60$

$6x - 4y = 36$

$-19y = -24$

$y = \frac{24}{19}$ ✓

$2x + 5\left(\frac{24}{19}\right) = 20$

$2x + \frac{120}{19} = 20 - \frac{120}{19}$

$2x = \frac{260}{19} \cdot \frac{1}{2}$

$x = \frac{130}{19}$ ✓

+10

Kandie Clark MAT1340 CWP4

)
$$\begin{aligned} 2x-2y+z &= -13 \\ 3x-5y-z &= -21 \\ x \qquad -2z &= 7 \\ 4x-4y+2z &= -24 \\ \hline 5x-4y &= -19 \end{aligned}$$

$\cdot -1$

$$\begin{aligned} 2x-2y+z &= -13 \\ 3x-5y-z &= -21 \\ \hline 5x-7y &= -34 \\ -5x+4y &= +19 \\ \hline -3y &= -15 \\ \tfrac{-3y}{-3} &= \tfrac{-15}{-3} \end{aligned}$$

$\boxed{y=5}$

$$\begin{aligned} 5x-4(5) &= -19 \\ 5x-20 &= -19 \quad +20 \\ 5x &= 1 \\ \tfrac{5x}{5} &= \tfrac{1}{5} \end{aligned}$$

$\boxed{x=\tfrac{1}{5}}$

$$\begin{aligned} 2(\tfrac{1}{5})-2\cdot 5+z &= -13 \\ \tfrac{2}{5}-10+z &= -13 \\ z &= -13+\tfrac{48}{5} \end{aligned}$$

$\boxed{z=-\tfrac{17}{5}}$

+10

)a.
$$\begin{aligned} 7x+17y+27z &= 30 \\ 2x+5y+8z &= 8 \\ x+2y+3z &= 4 \quad \cdot -2 \\ -2x-4y-6z &= -12 \quad \cdot 7 \\ \hline -3(y+2z &= -4) \\ -3y-6z &= 12 \\ 3y+6z &= -12 \\ \hline 0 & \end{aligned}$$

$$\begin{aligned} 7x+17y+27z &= 30 \\ -7x-14y-21z &= -42 \\ \hline 3y+6z &= -12 \end{aligned}$$

(2)
$$\begin{aligned} 14x+34y+54z &= 60 \\ -14x-35y-56z &= -56 \\ \hline -y-2z &= 4 \end{aligned}$$

$\boxed{y=-2z-4}$

Kandie Clark MAT 1340 WP 4

3a.) Continued

$7x+17y+27z=30$
$2x+5y+8z=8$
$x+2y+3z=6$

$x+2(-2z-4)+3z=6$
$x-4z-8+3z=6$
$x-z-8=6$
$+8 \quad +8$
$x-z=14$
$+z \quad +z$
$x=z+14$

$(x,y,z)=\{(z+14,-2z-4,z)\}$ (no brackets)

or say

$(x,y,z)\in\{(z+14,-2z-4,z) \mid z=$ any real $\#\}$ (yes brackets)

3b.) $z=0$

$0+14,-2\cdot0-4,0$
$\{14,-4,0\}$

$z=1$

$1+14,-2\cdot1-4,1$
$\{15,-6,1\}$

$+9.5$

$z=-1$

$-1+14,-2\cdot-1-4,-1$
$\{13,-6,-1\}$

$+9.5$

Kandie Clark MAT 1340 WP4

4.) $7x+17y+27z=30$
$2x+5y+8z=3$
$x+2y+3z=4$

$7x+17y+27z=30$
$-7x-14y-21z=-42$
$3y+6z=-12$

$2x+5y+8z=30$
$-2x-4y-4z=-12$
$y+2z=-9$

$-3y-6z=29$
$3y+6z=-12$
$0 \neq 17$

It's absurd to think that zero could possibly be equal to seventeen.

+10