

5.1 and 5.2 Quiz Review

Key

Cost/Revenue and Break Even Points

Cost/Revenue Tables and Coordinate Points. Complete the table below to find the break even point

$C = 36x + 200$

$R = 76x$

x	0	1	2	3	4	5	6	7
C	200	236	272	308	344	380	416	452
R	0	76	152	228	304	380	456	532

(5, 380)

$C = 25x + 210$

$R = 60x$

x	0	1	2	3	4	5	6	7	8
C	210	235	260	285	310	335	360	385	410
R	0	60	120	180	240	300	360	420	480

(6, 360)

Solve The system of equations with a Graph

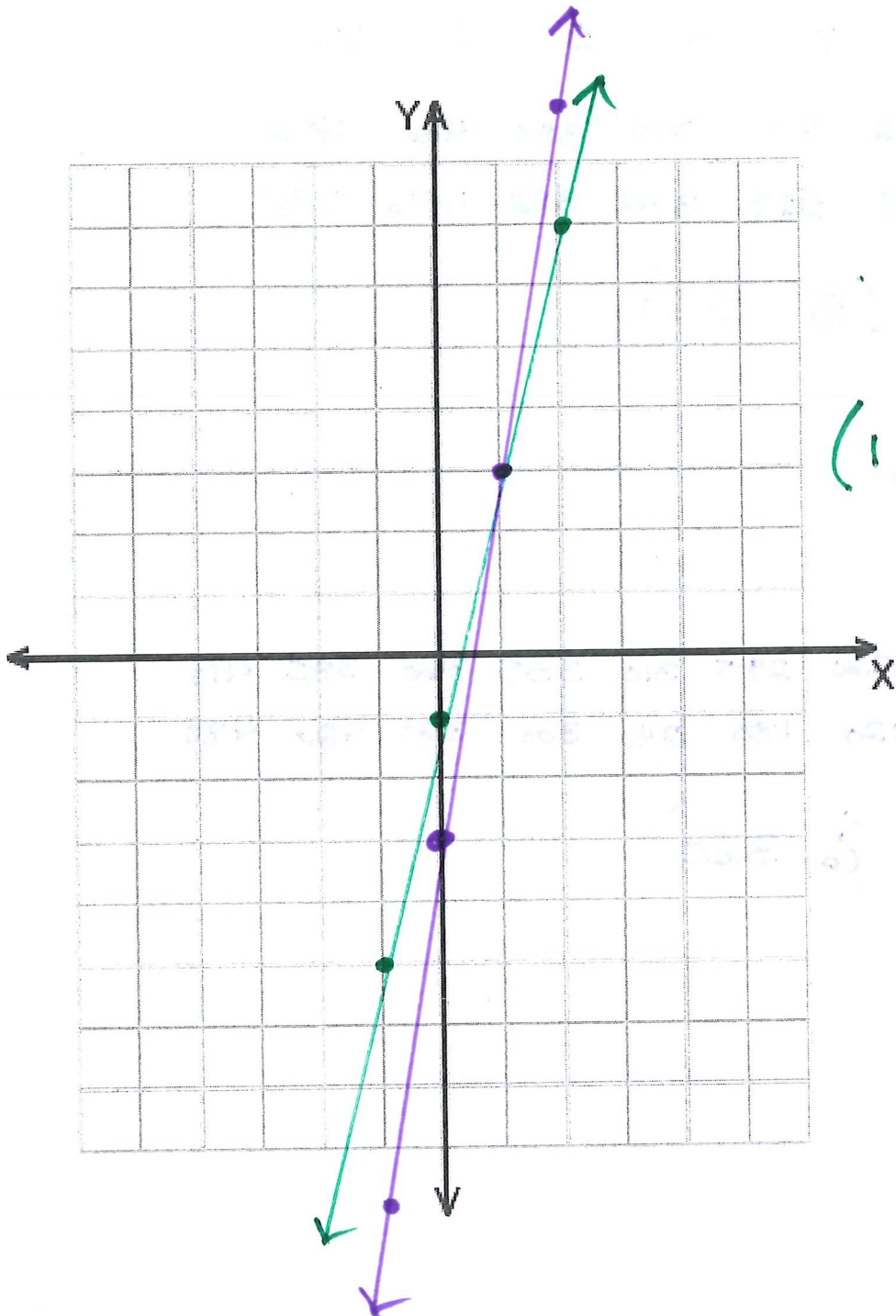
$$y = 6x - 3$$

$\frac{1}{6}$  OR  $\frac{1}{6}$

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

$$y = 4x - 1$$

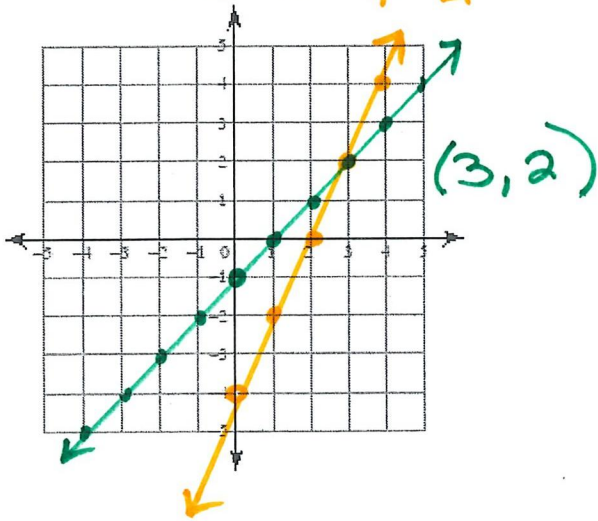
$\frac{1}{4}$   $\frac{1}{4}$



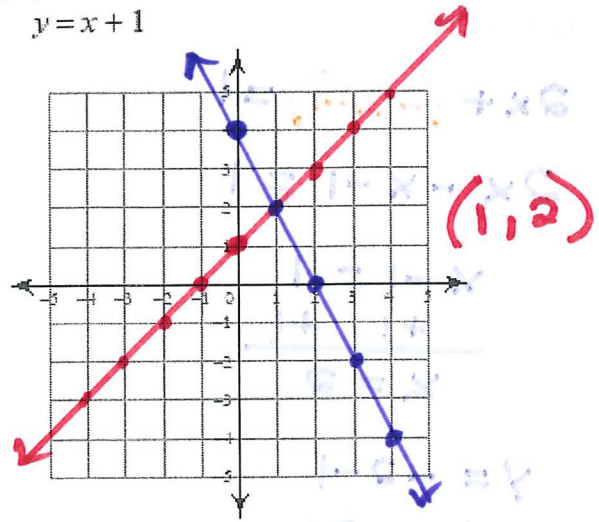
$(1, 3)$

Solve each system by graphing.

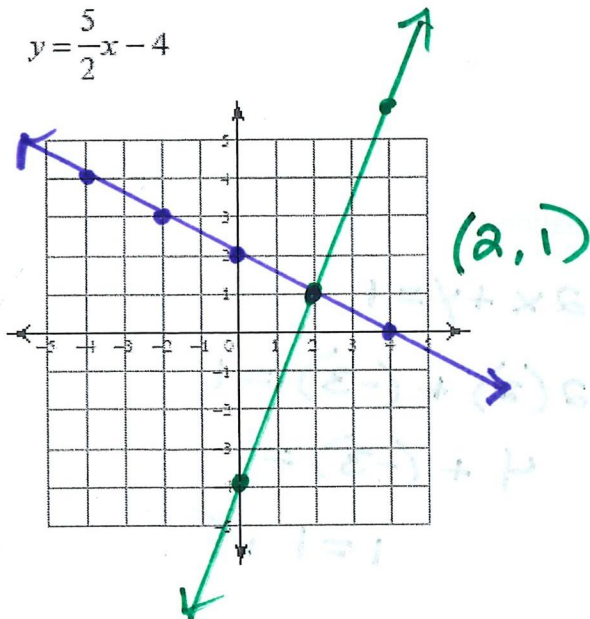
1)  $y = x - 1$   $m = 1$   $\frac{1}{1}$   $\frac{1}{1}$   
 $y = -2x - 4$   $m = -2$   $-\frac{2}{1}$   $\frac{2}{1}$



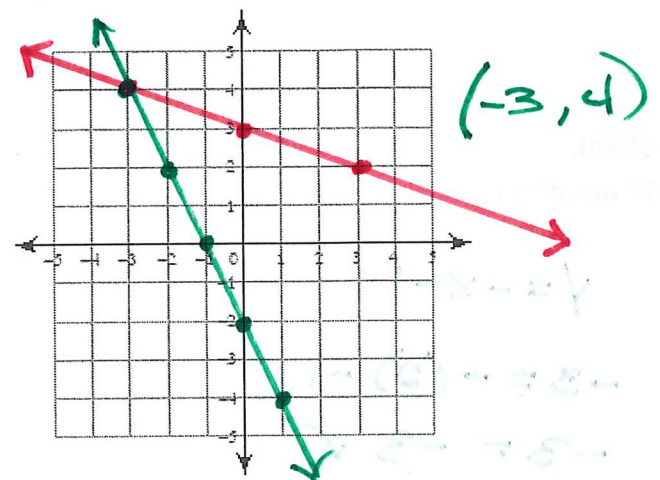
2)  $y = -2x + 4$   
 $y = x + 1$



3)  $y = -\frac{1}{2}x + 2$   
 $y = \frac{5}{2}x - 4$



4)  $y = -\frac{1}{3}x + 3$   
 $y = -2x - 2$



## Solve with Substitution

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Easy

$$y = -x - 1$$

$$2x + y = 1$$

$$2x + (-x - 1) = 1$$

$$2x - x - 1 = 1$$

$$\begin{array}{r} x - 1 = 1 \\ +1 \quad +1 \\ \hline x = 2 \end{array}$$

$$y = -2 - 1$$

$$y = -3$$

Solution (2, -3)

Check

1<sup>st</sup> equation

$$y = -x - 1$$

$$-3 = -(2) - 1$$

$$-3 = -3 \checkmark$$

2<sup>nd</sup> equation

$$2x + y = 1$$

$$2(2) + (-3) = 1$$

$$4 + (-3) = 1$$

$$1 = 1 \checkmark$$

Solve with Substitution

$$y = -3x + 7$$

$$-4x - 2y = -8$$

$$-4x - 2(-3x + 7) = -8$$

$$-4x + 6x - 14 = -8$$

$$2x - 14 = -8$$

$$+14 \quad +14$$

$$\frac{2x}{2} = \frac{6}{2}$$

$$x = 3$$

$$y = -3x + 7$$

$$y = -3(3) + 7$$

$$y = -9 + 7$$

$$y = -2$$

Check

1<sup>st</sup> equation

$$y = -3x + 7$$

$$-2 = -3(3) + 7$$

$$-2 = -9 + 7$$

$$-2 = -2 \checkmark$$

2<sup>nd</sup> equation

$$-4x - 2y = -8$$

$$-4(3) - 2(-2) = -8$$

$$-12 + 4 = -8$$

$$-8 = -8 \checkmark$$

$$8 - 4x = -8$$

Solution

$$(3, -2)$$

$$y = -3x + 7$$

Re-Write an equation First

$$\begin{aligned} 7x - 2y &= 5 \\ 2y - 4x &= -8 \end{aligned} \rightarrow$$

$$\begin{array}{r} 2y - 4x = -8 \\ +4x \quad +4x \\ \hline \end{array}$$

$$\frac{2y}{2} = \frac{4x - 8}{2}$$

$$y = 2x - 4$$

Solution  $(-1, -6)$

$$7x - 2(2x - 4) = 5$$

$$7x - 4x + 8 = 5$$

$$\begin{array}{r} 3x + 8 = 5 \\ -8 \quad -8 \\ \hline \end{array}$$

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

$$x = -1$$

$$7x - 2y = 5$$

$$7(-1) - 2y = 5$$

$$\begin{array}{r} -7 - 2y = 5 \\ +7 \quad +7 \\ \hline \end{array}$$

$$\begin{array}{r} -2y = 12 \\ -2 \quad -2 \\ \hline \end{array}$$

$$y = -6$$

Check

1<sup>st</sup> equation

$$7x - 2y = 5$$

$$7(-1) - 2(-6) = 5$$

$$-7 + 12 = 5$$

$$5 = 5 \checkmark$$

2<sup>nd</sup> equation

$$2y - 4x = -8$$

$$2(-6) - 4(-1) = -8$$

$$-12 + 4 = -8$$

$$-8 = -8 \checkmark$$

Re-Write an equation First

$$\begin{array}{r} x+7y=-14 \\ -3x+8y=13 \end{array} \rightarrow \begin{array}{r} x+7y=-14 \\ -7y \quad -7y \\ \hline x = -7y-14 \end{array}$$

Solution  $(-7, -1)$

$$-3(-7y-14)+8y=13$$

$$21y+52+8y=13$$

$$29y+52=13$$

$$\begin{array}{r} 29y+52=13 \\ -52 \quad -52 \\ \hline 29y = -29 \\ \frac{29}{29} \quad \frac{29}{29} \end{array}$$

$$y = -1$$

$$\begin{array}{r} x+7y=-14 \\ x+7(-1)=-14 \\ x-7=-14 \\ +7 \quad +7 \\ \hline x = -7 \end{array}$$

Check

1<sup>st</sup> equation

$$x+7y=-14$$

$$-7+7(-1)=-14$$

$$-7+(-7)=-14$$

$$-14 = -14 \checkmark$$

2<sup>nd</sup> equation

$$-3x+8y=13$$

$$-3(-7)+8(-1)=13$$

$$21+(-8)=13$$

$$13 = 13 \checkmark$$

(1)  $\gamma^2$

$\beta_1 = \gamma^2 \alpha$   
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