7:02
7:24

5.1 and 5.2 Quiz Review

Cost/Revenue and Break Even Points

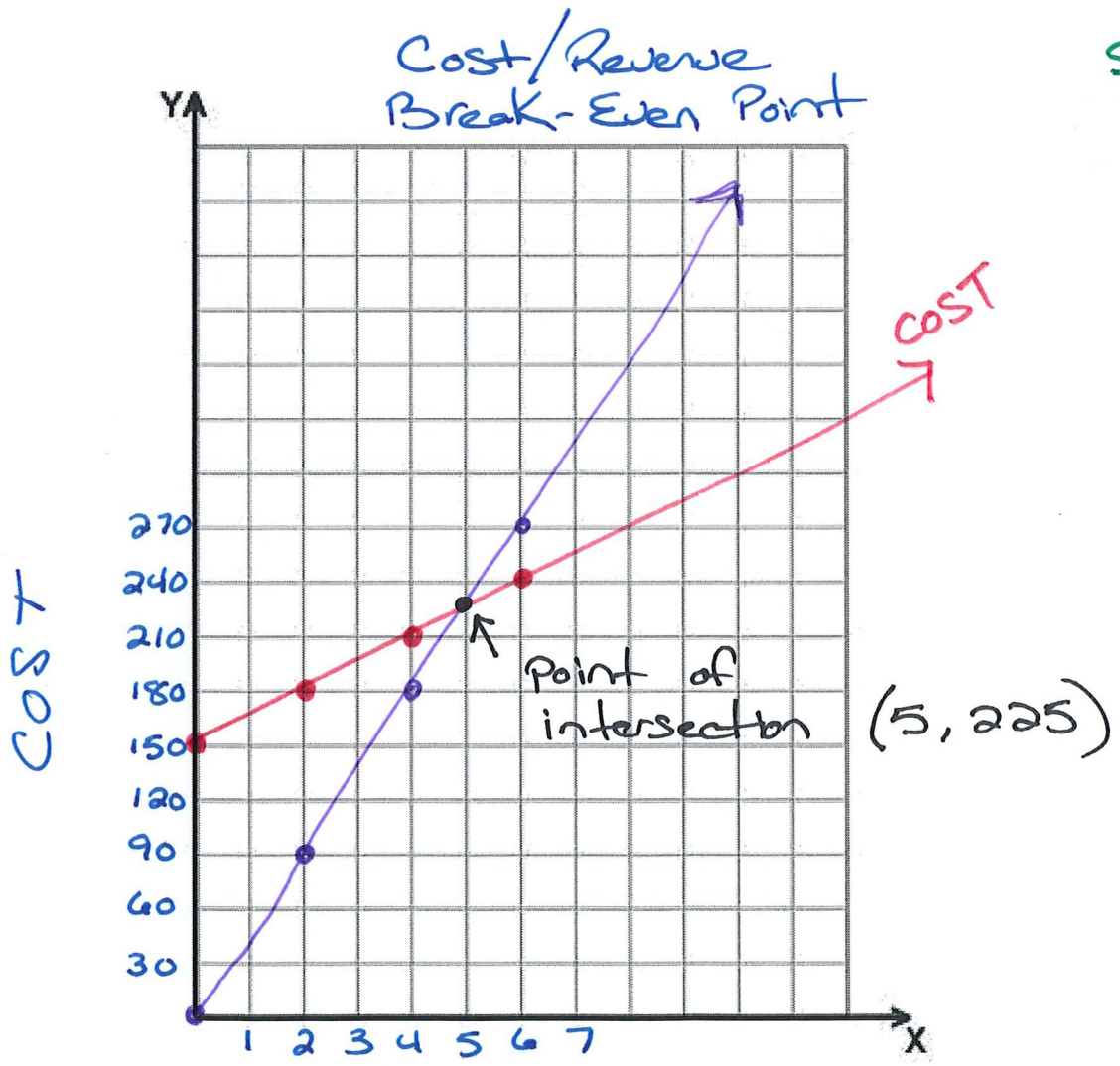
Cost/Revenue Tables and Coordinate Points. Just puts both tables sets of points into one table.

$C = 15x + 150$

$R = 45x$

x		0	1	2	3	4	5	6
C	RED	150	165	180	195	210	225	240
R	PURPLE	0	45	90	135	180	225	270

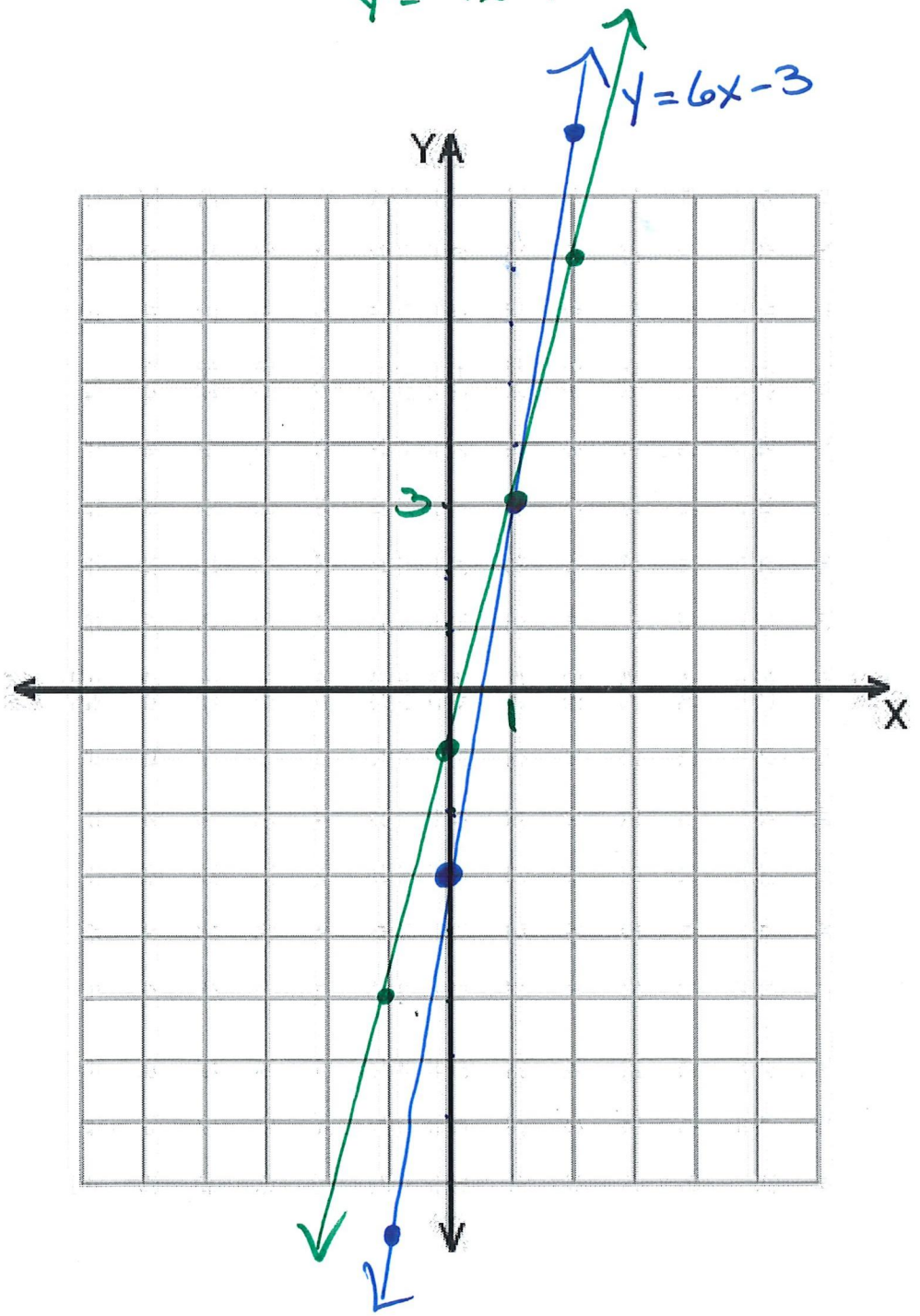
Solution: (5, 225)



Solve The system of equations with a Graph

- $y = 6x - 3$
- $-4x + y = -1$ →

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



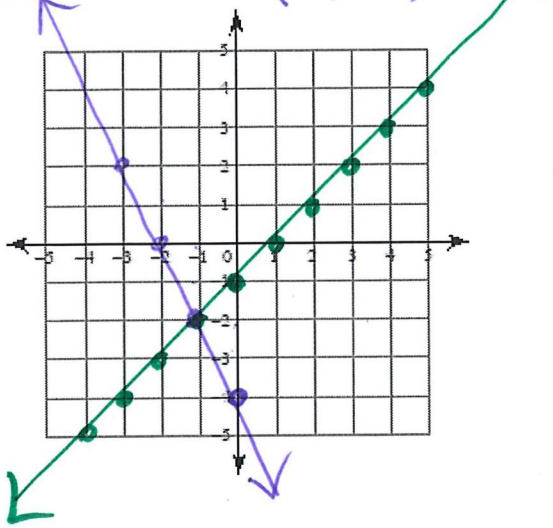
Solution:

(1, 3)

Solve each system by graphing.

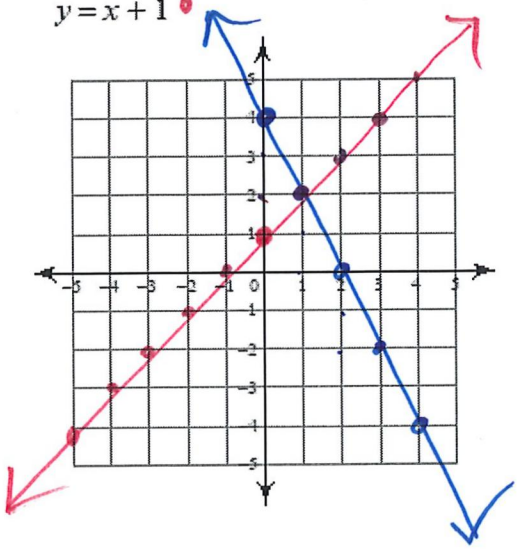
1) $y = x - 1$
$y = -2x - 4$

Solution
(-1, -2)

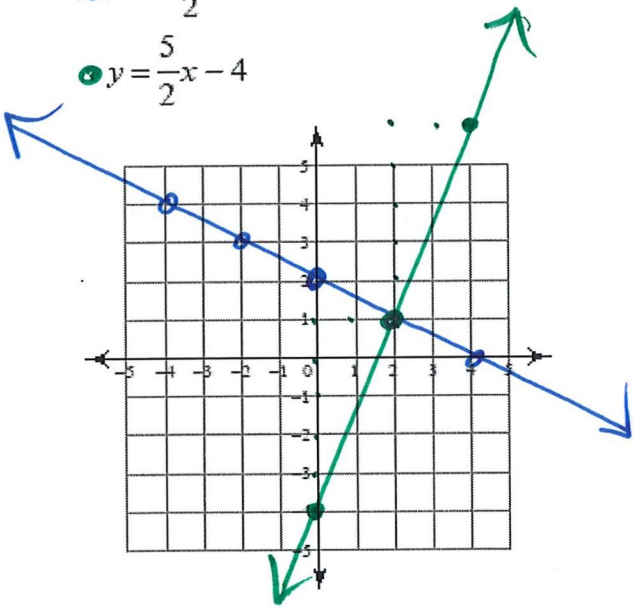


2) $y = -2x + 4$
$y = x + 1$

Solution
(1, 2)

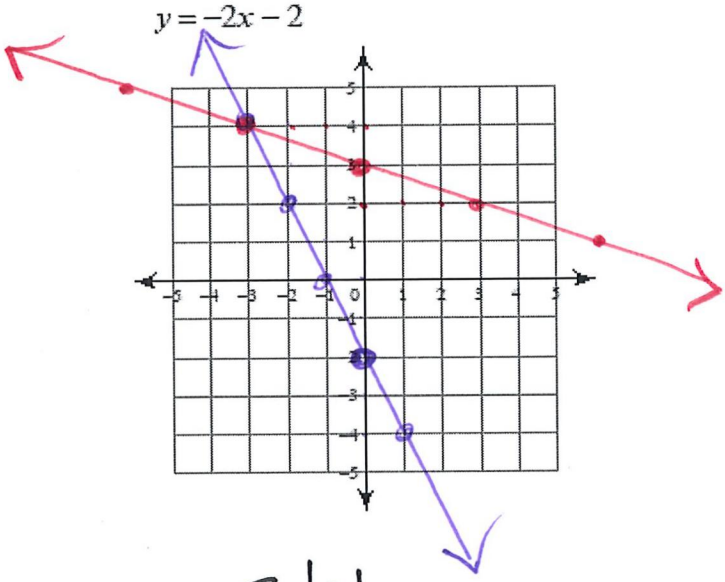


3) $y = -\frac{1}{2}x + 2$
$y = \frac{5}{2}x - 4$



Solution
(2, 1)

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



Solution
(-3, 4)

Solve with Substitution

Easy

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

Solution $(2, -3)$

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

$2x - x - 1 = 1$

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

$x = 2$

$y = -x - 1$
$y = -2 - 1$
$y = -3$

Check

1st equation $(2, -3)$

$y = -x - 1$

$-3 = -2 - 1$

$-3 = -3$ ✓

2nd equation

$2x + y = 1$

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

$4 + (-3) = 1$

$1 = 1$ ✓

Solve with Substitution

$y = -3x + 7$
$-4x - 2y = -8$

Solution $(3, -2)$

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

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

$2x - 14 = -8$

$+14 \quad +14$

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

$x = 3$

$y = -3x + 7$

$y = -3(3) + 7$

$y = -9 + 7$

$y = -2$

Check

1st equation $(3, -2)$

$y = -3x + 7$

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

$-2 = -9 + 7$

$-2 = -2$ ✓

2nd equation

$-4x - 2y = -8$

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

$-12 + 4 = -8$

$-8 = -8$ ✓

Re-Write an equation First

1st: $7x - 2y = 5$

2nd: $2y - 4x = -8$ ← Easiest to solve for y

Solution $(-1, -6)$

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

$$y = (2x - 4)$$ 2nd eq. substitute into 1st eq.

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

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

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

$$3x + 8 = 5$$

$$-8 \quad -8$$

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

$$x = -1$$

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

$$-7 - 2y = 5$$

$$+7 \qquad +7$$

$$\frac{-2y}{-2} = \frac{12}{-2}$$

$$y = -6$$

Check

1st equation

$$7x - 2y = 5$$

x	y
$(-1$	$-6)$

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

$$-7 + 12 = 5$$

$$5 = 5 \checkmark$$

2nd equation

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

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

$$-12 + 4 = -8$$

$$8 = 8 \checkmark$$

Re-Write an equation First

$x + 7y = -14$
$-3x + 8y = 13$

$x + 7y = -14$
$-7y \quad -7y$
$x = -7y - 14$

Solution $(-7, -1)$

1st EQ $x = (-7y - 14)$

2nd EQ $-3(x) + 8y = 13$

$-3(-7y - 14) + 8y = 13$
$21y + 42 + 8y = 13$
$29y + 42 = 13$
$-42 \quad -42$
$\frac{29y}{29} = \frac{-29}{29}$
$y = -1$

Now Solve for "x"

$x + 7y = -14$
$x + 7(-1) = -14$
$x - 7 = -14$
$+7 \quad +7$
$x = -7$

Check

1st equation

$x + 7y = -14$
$-7 + 7(-1) = -14$
$-7 - 7 = -14$
$-14 = -14$ ✓

2nd equation

$-3x + 8y = 13$
$-3(-7) + 8(-1) = 13$
$21 - 8 = 13$
$13 = 13$ ✓