East Los Angeles College
Department of Mathematics
Math 115
Test 2

29 ✓

Solve for the indicated variable.

1) $d = rt$ for r

$\frac{d}{t} = \frac{rt}{t}$

$\boxed{\frac{d}{t} = r}$

✓

2) $p = 2l + 2w$ for w

$p = 2l + 2w$

$-2l \quad -2l$

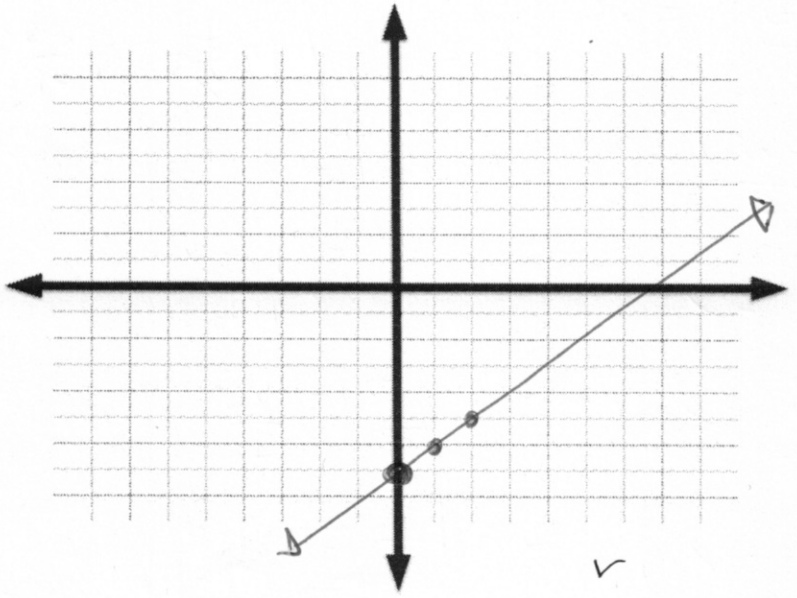
$\frac{p-2l}{2} = \frac{2w}{2}$

$\boxed{\frac{p-2l}{2} = w}$

✓

Graph the following linear equations

3) $x - y = 7$



✓

$x - y = 7$

$-x \quad -x$

$\frac{-1y}{-1} = \frac{-x + 7}{-1}$

$y = \frac{-x}{-1} + \frac{7}{-1}$

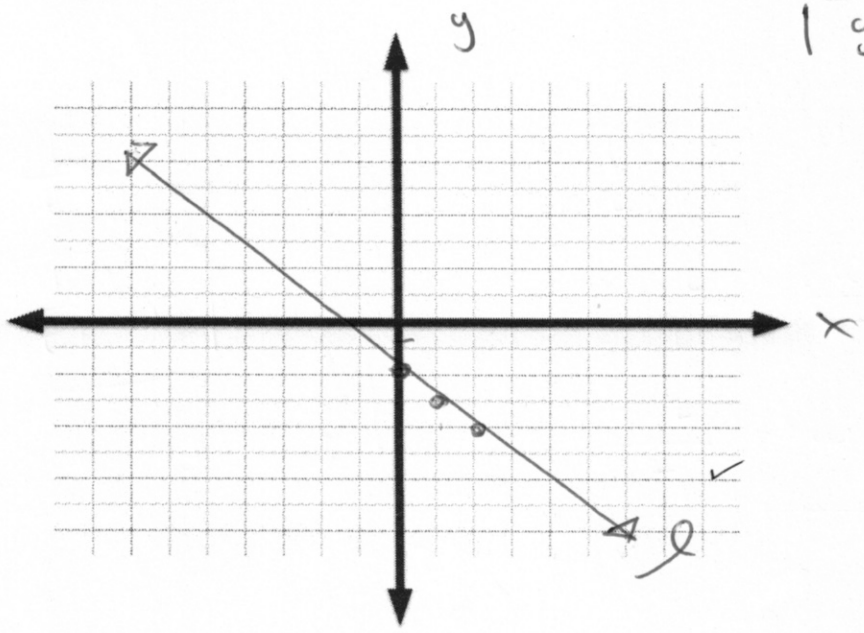
$\boxed{y = x - 7}$

$m = 1$, $b = -7$

✓ ✓

5 ✓

4) $x + y = -2$



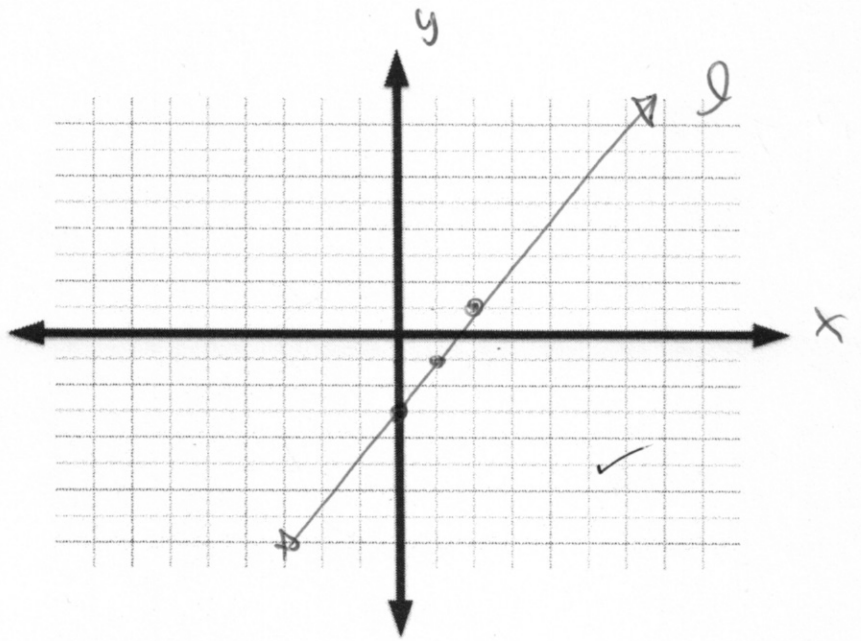
$x + y = -2$

$-x \quad -x$

$y = -x - 2$

$m = -1$ ✓ $b = -2$ ✓

5) $2x - y = 3$



$2x - y = 3$

$-2x \quad -2x$

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

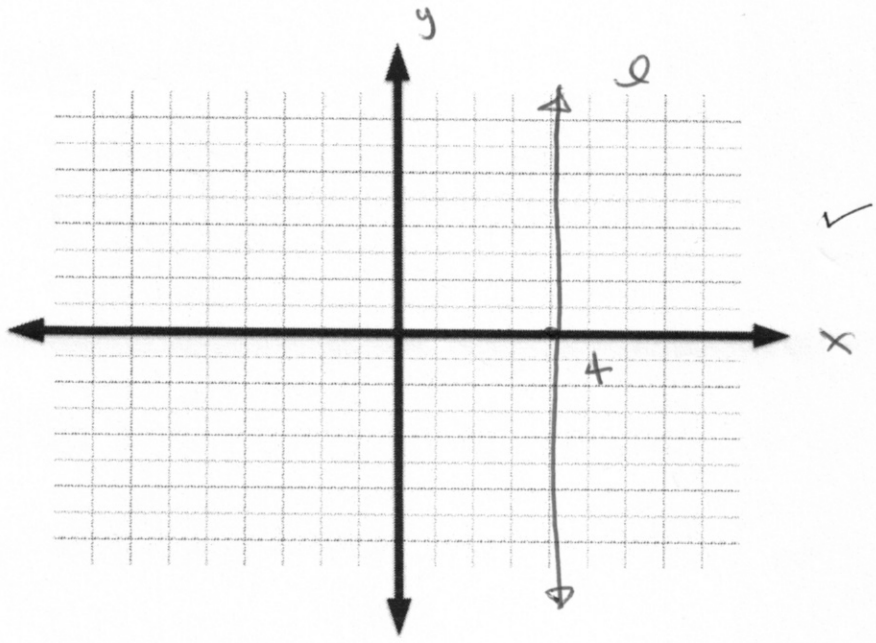
$y = \frac{-2x}{-1} + \frac{3}{-1}$ ✓ ✓

$y = 2x - 3$

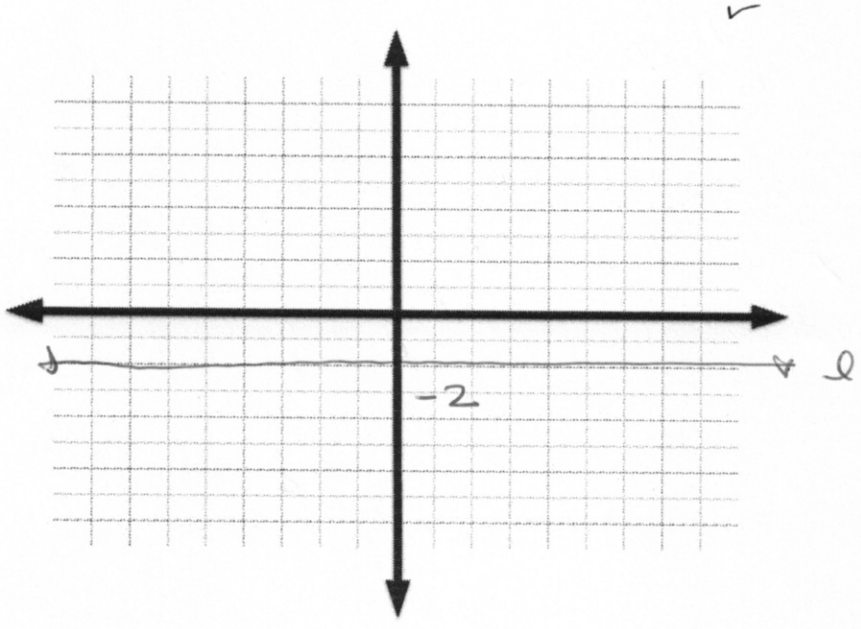
$m = 2$; $b = -3$

6✓

6) $x = 4$



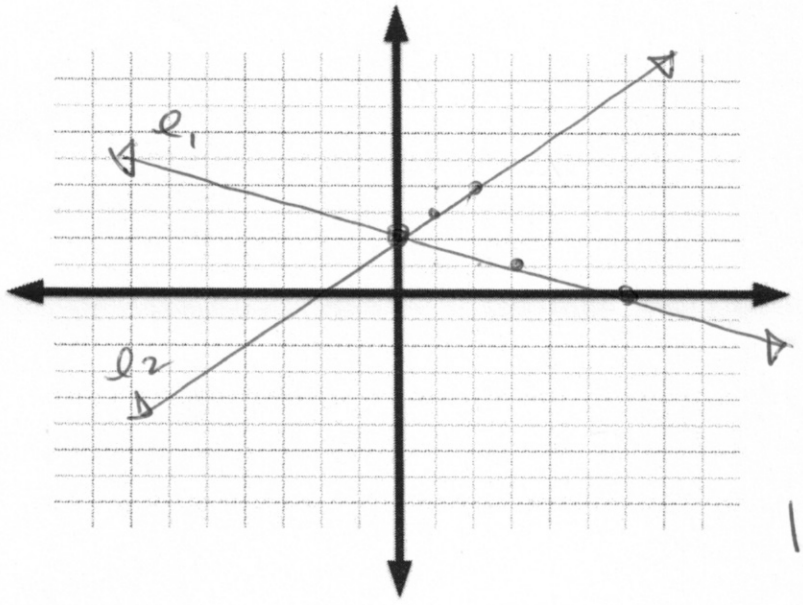
7) $y = -2$



8) Solve the linear system by graphing.

$\ell_1 \quad x+3y=6$

$\ell_2 \quad x-y=-2$



(ℓ_1) $x+3y=6$

$-x \qquad -x$

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

$y = -\frac{1}{3}x + 2$ ✓ ✓

(ℓ_2) $x-y=-2$

$-x \qquad -x$

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

$y = x + 2$ ✓ ✓

$(0,2)$ ✓ ✓

Determine the equation of the line that:

9) Passes through the point $(4,-1)$ (x y), with slope $-\frac{1}{2}$ (m)

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

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

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

$-1 \qquad -1$ ✓

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

8 ✓

10) Passes through the point $\overset{x\ y}{(0,-5)}_1$ and is parallel to the equation $2x+y=3$

$-2x \quad -2x$

$y = -2x + 3$

m

$m = -2$ ✓ ✓

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

$y - -5 = -2(x - 0)$

$y + 5 = -2x$

$-5 \qquad -5$

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

11) Passes through the pint $\overset{x\ y}{(1,2)}_1$ and is perpendicular to the equation $3x+y=-4$

$y = -3x - 4$

$m = \frac{1}{3}$

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

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

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

$+2 \qquad +2\frac{3}{3}$

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

$\boxed{y = \frac{1}{3}x - \frac{5}{3}}$ ✓ ✓

12) Passes through the points $\overset{x\ y}{(1,-2)}_1$ and $\overset{x\ y}{(4,1)}_2$

$1 \quad -2$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$4 \quad 1$

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

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

$m = \frac{3}{3}$

$m = 1$

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

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

$y + 2 = x - 1$

$-2 \qquad -2$

$\boxed{y = x - 3}$ ✓ ✓

6 ✓

13) Solve the system by the Addition Method.

$$2x + y = 7$$
$$2(-x + 3y) = -7 \cdot 2$$

$$\begin{array}{rr} 2x+y & =7 \\ -2x+6y & =-14 \\ \hline \end{array}$$

$$7y = -7$$

$$\frac{7y}{7} = \frac{-7}{7}$$

$$\boxed{y=-1}$$

use back sub

$$2x + y = 7$$
$$-1$$

$$2x - 1 = 7$$
$$+1 \quad +1$$

$$\frac{2x}{2} = \frac{8}{2}$$

$$\boxed{x=4}$$

$$\boxed{(4,-1)}$$