Name: **Key**

A1 Review – Solving Equations

1. Simplify each expression below.

a. $1 + 7(1 - 3b)$

$1 + 7 - 21b$

$\boxed{8 - 21b}$

b. $4p - (1 - 6p)$

$4p - 1 + 6p$

$\boxed{10p - 1}$

c. $-8(4x + 7) - 10 + 2x$

$-32x - 56 - 10 + 2x$

$\boxed{-30x - 64}$

d. $-9(6m - 3) + 6(1 + 4m)$

$-54m + 27 + 6 + 24m$

$\boxed{-30m + 33}$

2. Solve each equation. Show your steps and show the check.

a. $2p + 4 = 14$

$\quad -4 \quad -4$

$\dfrac{2p = 10}{2} \quad \dfrac{}{2}$

$\boxed{p = 5}$

b. $-20 = -6x - 2x$

$\dfrac{-20}{-8} = \dfrac{-8x}{-8}$

$\boxed{x = 2.5}$

c. $-12 + 4m = 6m - 2$

$\quad -6m \quad -6m$

$-12 - 2m = -2$

$+12 \qquad +12$

$-2m = 10$

$\boxed{m = -5}$

d. $7(-8r - 2) = 35 - 7r$

$-56r - 14 = 35 - 7r$

$+7r \qquad\qquad +7r$

$-49r - 14 = 35$

$-49r = 49$

$\boxed{R = -1}$

3. Simplify. $5m(4k - 3 + 2m) - 11k$

$20mk - 15m + 10m^2 - 11k$

4. Solve for m. $-4 + 2m + 5 = 10 + 3m + 2m$

$2m + 1 = 10 + 5m$

$-5m \qquad\quad -5m$

$-3m + 1 = 10$

$-1 \quad -1$

$-3m = 9$

$\boxed{m = -3}$

5. Solve for y. $-21x - 3y = 15$

$+21x \qquad\qquad +21x$

$\dfrac{-3y}{-3} = \dfrac{15}{-3} + \dfrac{21x}{3}$

$\boxed{y = -5 - 7x}$

6. Graph the line $3y + 4x = 6$.
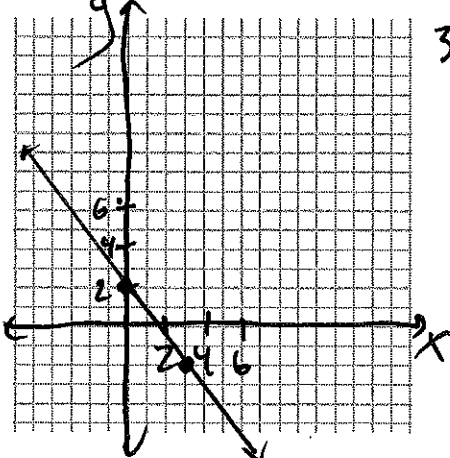
$3y + 4x = 6$

$\quad -4x \quad -4x$

$\dfrac{3y}{3} = \dfrac{6}{3} - \dfrac{4x}{3}$

$y = 2 - \dfrac{4}{3}x$

7. Graph: $x + 4y = 16$

$x + 4y = 16$

$-x \qquad\quad -x$
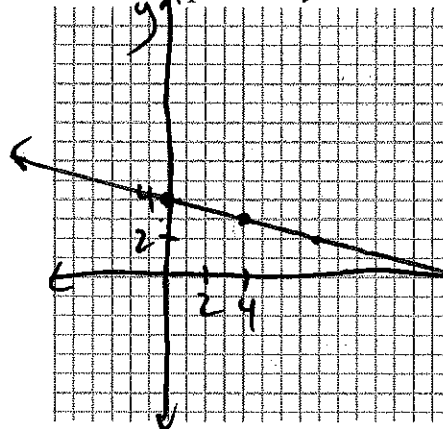
$\dfrac{4y}{4} = \dfrac{16}{4} - \dfrac{x}{4}$

$y = 4 - \dfrac{1}{4}x$

8. Solve for the x- and y-intercepts for the following equations. Then graph them.
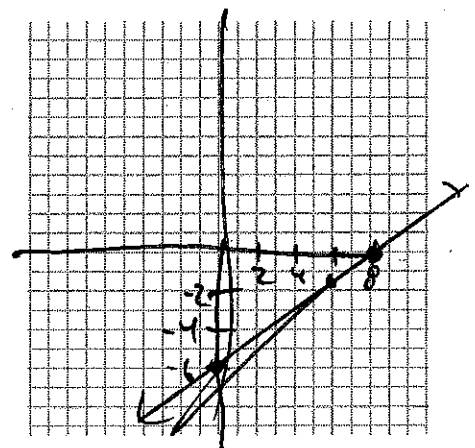
a. y = 2x − 6
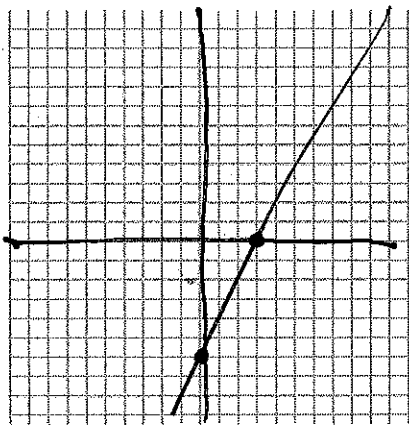
b. $y = \frac{1}{3}x + 2$
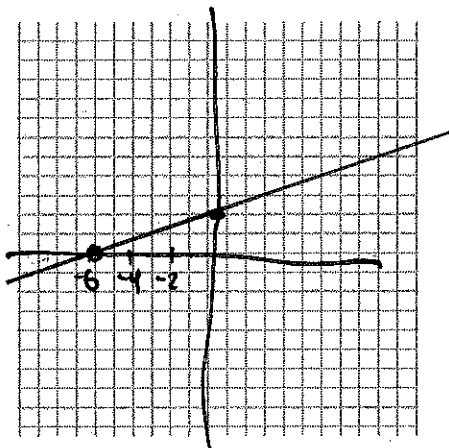
c. 3x − 4y = 24

y-int: (0, −6)
x-int: (3, 0)

y-int: (0, 2)
x-int: (−6, 0)

y-int: (0, −6)
x-int: (0, 0)

9. Solve for the missing variable. Show your steps.

a. $10 = -6 - 2m$

$16 = -2m$

$\boxed{m = -8}$

b. $6x - 10 = 6x + 11$

$\boxed{No \ Solution}$

c. $3x + 5 - x = x - 3$

$2x + 5 = x - 3$
$-x \qquad -x$

$x + 5 = -3$

$\boxed{x = -8}$

d. $-6n - 20 = -2n + 4(1 - 3n)$

$-6n - 20 = -2n + 4 - 12n$

$-6n - 20 = -14n + 4$
$+14n \qquad +14n$

$8n = 24 \quad \boxed{n = 3}$

e. $-7x - 3x + 2 = -8x - 8$

$-10x + 2 = -8x - 8$
$+8x \qquad +8x$

$-2x = -10$

$\boxed{x = 5}$

f. $5 - 4(3x + 1) = -12x$

$5 - 12x - 4 = -12x$

$1 = 0$

$\boxed{No \ Solution}$