Algebra I

3-8

Transforming Formulas

<u>Literal Equation -</u> an equation with no numbers, only variables

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Solve the given formula for the variable shown in color.

1) $b = ax$; x

$$\frac{b}{a} = \frac{ax}{a}$$

$$\boxed{\frac{b}{a} = x}$$

2) $b = x + a$; x

$$b - a = x + a - a$$

$$\boxed{b - a = x}$$

3) $c = ax - b$; x

$$c = ax - b$$
$$c + b = ax - b + b$$
$$\frac{c + b}{a} = \frac{ax}{a}$$
$$\boxed{\frac{c + b}{a} = x}$$

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4) $A = \frac{1}{2}bh$; b

$$2(A) = \left(\frac{1}{2}bh\right)2$$

$$\frac{2A}{h} = \frac{bh}{h}$$

$$\boxed{\frac{2A}{h} = b}$$

5) $C = \frac{mv^2}{r}$; r

$$r(C) = \left(\frac{mv^2}{r}\right)r$$

$$\frac{Cr}{C} = \frac{mv^2}{C}$$

$$\boxed{r = \frac{mv^2}{C}}$$

Write the equation so that y is a function of x.

6) $12x - 4y = 36$ get y on a side by itself

$$12x - 12x - 4y = 36 - 12x$$

$$\frac{-4y}{-4} = \frac{36 - 12x}{-4}$$

$$\boxed{y = -9 + 3x}$$

Solve the literal equation for x. Then use this result to solve the next equation.

7) $\frac{x}{a} + b = c$; $\frac{x}{4} + 6 = 13$

$$\frac{x}{a} + b - b = c - b$$
$$a\left(\frac{x}{a}\right) = a(c - b)$$
$$x = a(c - b)$$

$a = 4$
$b = 6$
$c = 13$

$$x = 4(13 - 6)$$
$$x = 4(7)$$
$$\{28\}$$

Assignment:
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5, 6, 8, 9,
12-26 even,
27, 28, 32-34,
36, 37