Name: _____ Date: _____

# Notes: Solving Equations

**Do Now:** Solve for x in each of the equations.

1) $2.25(6x - 12) = -18 + 19.5x + 20$

2) $y = mx + b$

Which value of x satisfies the equation $\frac{5}{6}\left(x + \frac{9}{20}\right) = 36$?

**Putting Fractions in the Calculator:**

How about....

$2x - 15 = 2x + 15$ **vs** $2x - 15 = 2x - 15$

Solve the equation below for $x$ in terms of $k$.

$$8(kx - 9) - 3kx = 28 - 13k$$

The equation for the volume of a cylinder is $V = \pi r^2 h$. The positive value of $r$, in terms of $h$ and $V$, is

Solve for $x$ in the equation,

$$xy + 8xz = 20$$

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# Classwork: Solving Equations

Solve each of the equations for the variable stated. If no variable stated, solve for x.

1) $Solve\ for\ H$: $B = H + xH$

2) $5(0.5x - 1.2) = \frac{5}{2}(x - 2.4)$

3) $Solve\ for\ h$: $V = \frac{1}{3}\pi r^2 h$

4) $4[0.3b + (-5)] + 12 = 0.8\left(2b - \frac{1}{2}\right)$

5)

The distance a free falling object has traveled can be modeled by the equation $d = \frac{1}{2}at^2$, where $a$ is acceleration due to gravity and $t$ is the amount of time the object has fallen. What is $t$ in terms of $a$ and $d$?

(1) $t = \sqrt{\frac{da}{2}}$

(3) $t = \left(\frac{da}{d}\right)^2$

(2) $t = \sqrt{\frac{2d}{a}}$

(4) $t = \left(\frac{2d}{a}\right)^2$

6)

An equation is given below.

$$4(x - 7) = 0.3(x + 2) + 2.11$$

The solution to the equation is

(1) 8.3

(2) 8.7

(3) 3

(4) $-3$

7)

The formula for blood flow rate is given by $F = \frac{p_1 - p_2}{r}$, where $F$ is the flow rate, $p_1$ the initial pressure, $p_2$ the final pressure, and $r$ the resistance created by blood vessel size. Which formula can *not* be derived from the given formula?

(1) $p_1 = Fr + p_2$

(2) $p_2 = p_1 - Fr$

(3) $r = F(p_2 - p_1)$

(4) $r = \frac{p_1 - p_2}{F}$

8) The formula for the area of a triangle is $A = \frac{1}{2}bh$. Express $b$ in terms of $A$ and $h$.

The area of a triangle is 45 square feet and its height is 3 ft. Find the base of the triangle.