4.1.1 or 4.1a Solving & Verifying First Degree Equation

p. 99

Remember:

An equation is a math sentence with an equal sign.
<u>An equal sign.</u>

To keep equal values on each side of the equal sign,

"Whatever you do to one side of the equation, you must do to the other side."

ex)

$$6 + 2 = 5 + 3$$
$$\underline{-2 \qquad\qquad -2}$$

$$6 = (5 + 1) \cdot 3$$
$$\times 3$$

$$18 = 5(3) + 1(3)$$

$$18 = 15 + 3$$

TO SOLVE FOR A VARIABLE, YOU MUST GET
YOUR VARIABLE BY ITSELF ON ONE SIDE OF
THE EQUAL SIGN.

STEPS : ① FIND YOUR VARIABLE

BY USING
INVERSE
OPERATIONS

② REMOVE ANY ==CONSTANT== FIRST

③ REMOVE ANY ==COEFFICIENT== NEXT

EXAMPLES :

1) $2x + 3 = 9$

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

$-3 \quad -3$

$\Rightarrow \boxed{x = 3}$

2) $3 = \dfrac{x}{4}$

$+1 \quad (4)$

$= 4$

$\dfrac{x}{4} = 4$

$(-1) \quad +1$

$\boxed{x = 16}$

3)

$-\dfrac{x}{1.2} = 10$

$\dfrac{x}{1.2} = 10$

(-1.2)

$\dfrac{x}{-1.2} = 10 \, (-1.2)$

4)

$$-8 = -\frac{2}{3}n + 5$$

$$-8 = -\frac{2}{3}n + 5$$
$$\quad -5 \qquad -5$$

$$-13 = -\frac{2}{3}n$$
$$(3) \qquad (3)$$

$$-13(3) = -\frac{2}{3}n(3)$$

$$\text{OR}$$

$$-39 = -2n$$
$$\frac{}{-2} \qquad \frac{}{-2}$$

$$19.5 = n$$

$$\boxed{x = -12}$$

5)

$$2.4n + 0.40 + \frac{2}{5}n + 1.6 = 1.6$$

CHANGE TO DECIMALS → CHANGE TO FRACTIONS →

$$2.4n + \frac{2}{5} + 1.6 = 1.6$$

$$\frac{2}{5} + 2.4n = 0.40 + 2.4n$$
$$\frac{2}{5} = \frac{4}{10}$$

$$\frac{2}{5} + \frac{4}{n} = \frac{4}{10}$$
$$\frac{2}{5} = \frac{4}{10} \quad -\frac{4}{10}$$

$$9.6 = 0.40 + 2.4n$$
$$-0.40 \quad -0.40$$

$$\frac{9.2}{2.4} = \frac{2.4n}{2.4}$$

$$1.2 = \frac{9.2}{2.4}$$

$$\boxed{n = 9.5.61}$$

$$n$$

$$= 0.5 = \frac{1}{2} = \frac{2e}{10}$$

$$\frac{24}{10}\,n \;\left(\frac{0}{24}\right)\;=\;\frac{24}{10}\,n \;(1)$$

$$= \frac{16-4}{10}\;(1)\;=\;\frac{14}{10}\cdot\frac{10}{24}\;\left(\frac{10}{24}\right)$$

$$\boxed{n = \frac{1}{3}}$$

P. 100

#1-8 NOVICE, #1-16 APPRENTICE

#9-25 EXPERTS