

B. Solve Linear Equations

key

Example: Solve the equation. $-4(3x+5) = -2(5-x)$

Distribute

$$-4(3x+5) = -2(5-x)$$

Add $12x$ to each side

$$-12x - 20 = -10 + 2x$$

Add 10 to each side

$$\begin{array}{r} +12x \qquad \qquad +12x \\ \hline -20 = -10 + 14x \\ +10 \quad +10 \\ \hline -10 = 14x \end{array}$$

Divide each side by 14

$$-\frac{10}{14} = \frac{14x}{14}$$

Simplify/Reduce

$$-\frac{5}{7} = x$$

Directions: Solve the equation. Circle your final answer.

1) $24x + 16 = 12$

$$24x = -4$$

$$\boxed{x = -\frac{1}{6}}$$

or

$$-0.1\bar{6}$$

2) $-6y + 15 = -9$

$$-6y = -24$$

$$\boxed{y = 4}$$

3) $4(q-5) = 16$

$$4q - 20 = 16$$

$$4q = 36$$

$$\boxed{q = 9}$$

4) $7m + 38 = -5m - 16$

$$12m = -54$$

$$\boxed{m = -4.5}$$

B. Solve Linear Equations – Continued

key i

Directions: Solve the equation. Circle your final answer.

5) $48j + 25 = 12j - 11$

$$36j = -36$$

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

6) $8(2n - 5) = 3(6n - 2)$

$$16n - 40 = 18n - 6$$
$$-34 = 2n$$

$$\boxed{-17 = n}$$

7) $5n + 11 = -9$

$$\boxed{n = -4}$$

8) $6k + 7 = 4 + 12k$

$$3 = 6k$$

$$\boxed{0.5 = k}$$

9) $-t - 2 = 9(t - 8)$

$$-t - 2 = 9t - 72$$

$$70 = 10t$$

$$\boxed{t = 7}$$

10) $3(2x - 5) - x = -7(x + 3)$

$$6x - 15 - x = -7x - 21$$

$$5x - 15 = -7x - 21$$

$$12x - 15 = -21$$

$$12x = -6$$

$$\boxed{x = -0.5}$$