Worksheet 2015-8ΣE-00003(1)

(1) Solve the following equations:

(a) $28 = 4 - 3p$

$3p = 4 - 28$

$3p = -24$

$p = \frac{-24}{3}$

$p = -8$

(b) $\frac{x}{2} - 4 = 6$ LCD = 2

$\frac{\cancel{2}}{1} \times \frac{x}{\cancel{2}} - \frac{2}{1} \times \frac{4}{1} = \frac{2}{1} \times \frac{6}{1}$

$x - 8 = 12$

$x = 12 + 8$

$x = 20$

(c) $-5m - 2 = 6 - 4m$

$-5m + 4m = 6 + 2$

$-1m = 8$

$m = -8$

(d) $6(2 + x) + x = -12$

$12 + 6x + x = -12$

$7x = -12 - 12$

$7x = -24$

$x = \frac{-24}{7} = -3\frac{3}{7}$

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

$3x - 12 = 2x - 4 + 0$

$3x - 2x = -4 + 12$

$x = 8$

(f) $\frac{-y}{3} + 11 = 0$ LCD = 3

$\frac{\cancel{3}}{1} \times \frac{-y}{\cancel{3}} + \frac{3}{1} \times \frac{11}{1} = \frac{3}{1} \times 0$

$-y + 33 = 0$

$-y = -33$

$y = 33$

(g) $t - 6 = 2t + 4$

$t - 2t = 4 + 6$

$-t = 10$

$t = -10$

(h) $2 - 1(k - 3) = 5 - 2k$

$2 - 1k + 3 = 5 - 2k$

$-1k + 2k = 5 - 2 - 3$

$k = 0$

(i) $4 + \frac{y}{5} = 2$ LCD = 5

$\frac{5}{1} \times \frac{4}{1} + \frac{5}{1} \times \frac{y}{5} = \frac{2}{1} \times \frac{5}{1}$

$20 + y = 10$

$y = 10 - 20$

$y = -10$

(j) $p^2 + p - 6 = 4 + p^2$

$p^2 + p - p^2 = 4 + 6$

$p = 10$

(2) Solve for x and check your answer: $\frac{x}{3} + 1 = x - 3$

$\frac{x}{3} = x - 3 - 1$

$\frac{x}{3} = x - 4$

$\frac{3}{1} \times \frac{x}{3} = \frac{3}{1} \times \frac{x}{1} - \frac{3}{1} \times \frac{4}{1}$

$x = 3x - 12$

$x - 3x = -12$

$-2x = -12$

$x = \frac{-12}{-2}$

$x = 6$

Check:

$LHS = \frac{x}{3} + 1$

$= \frac{6}{3} + 1$

$= 2 + 1$

$LHS = 3$

$RHS = x - 3$

$= 6 - 3$

$RHS = 3$

$\therefore LHS = RHS$

$\therefore x = 6$