**Math 9** **Solving Two Step Equations Part 1**

**Steps to solve the following two step equations:**

- Add or Subtract first to **isolate the term** with ***x***, then multiply or divide to isolate the ***x***
- Check your answer.

**Ex.** Solve. Show your work. (Check your answer mentally)

a) $2x - 7 = 13$

$+7 \quad +7$

$\frac{2x}{2} = \frac{20}{2}$

$x = 10$

b) $-3x + 2 = 17$

$-2 \quad -2$

$\frac{-3x}{-3} = \frac{15}{-3}$

$x = -5$

c) $\frac{x}{3} + 14 = 38$

$-14 \quad -14$

$\frac{3x}{3} = 24 \cdot 3$

$x = 72$

d) $5 = \frac{x}{12} + 6$

$\frac{x}{12} + 6 = 5$

$-6 \quad -6$

$\frac{12x}{12} = -1(12)$

$x = -12$

e) $\frac{2}{3}x + 1 = 9$

$-1 \quad -1$

$\frac{3}{2} \cdot \frac{2}{3}x = 8 \cdot 3$

$\frac{2x}{2} = \frac{24}{2}$

$x = 12$

f) $x + 5 = \frac{1}{2}$

$-5 \quad -5$

$x = \frac{1}{2} - \frac{5}{1}$

$x = \frac{1}{2} - \frac{10}{2}$

$x = -\frac{9}{2}$

**Questions:** Solve. Show your work!

1) $-5 + 7x = 16$

$+5 \quad +5$

$\frac{7x}{7} = \frac{21}{7}$

$x = 3$

2) $4 + 3x = 37$

$-4 \quad -4$

$\frac{3x}{3} = \frac{33}{3}$

$x = 11$

3) $-7 = 5x - 42$

$+42 \quad +42$

$\frac{35}{5} = \frac{5x}{5}$

$7 = x$

4) $-6x - 30 = -10$

$+30 \quad +30$

$\frac{-6x}{-6} = \frac{20}{-6}$

$x = \frac{-10}{3}$

$\frac{-10}{3} = \frac{10}{-3} = -\frac{10}{3}$

5) $\frac{x}{-4} - 12 = -2$

$+12 \quad +12$

$\frac{-4x}{-4} = 10(-4)$

$x = -40$

6) $4 = \frac{x}{3} + 7$

$-7 \quad -7$

$(3)-3 = \frac{x}{3}(3)$

$-9 = x$

7) $\frac{x}{6} + 11 = -4$

$-11 \quad -11$

$\frac{6x}{6} = -15(6)$

$x = -90$

8) $\frac{x}{-2} - 5 = -8$

$+5 \quad +5$

$\frac{-2x}{-2} = -3(-2)$

$x = 6$

9) $5x + 2 = \frac{3}{4}$ $-2$

$-2$

$5x = \frac{3}{4} - \frac{2}{1}$

$5x = \frac{3}{4} - \frac{8}{4}$

$\frac{5x}{5} = \frac{-5}{4} \div \frac{5}{1}$

$x = -\frac{5}{4} \times \frac{1}{5}$

$x = \frac{-5}{20}$

$x = \frac{1}{4}$