

6.3B Solving Two-Step Equations

Like last day we will **isolate the variable** by performing the **opposite operation** to both sides.

When performing several steps to isolate the variable we use **reverse order of operations** (SAMDEB?).

Ex. Solve & check

$$2x - 4 = 8$$

$$\downarrow$$

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

$$\downarrow$$

$$x = 6$$

check

$$2(6) - 4$$

$$12 - 4$$

$$8 = 8 \checkmark$$

$$-3x + 5 = -10$$

$$\downarrow$$

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

$$\downarrow$$

$$x = 5$$

ch

$$-3(5) + 5$$

$$-15 + 5$$

$$-10 = -10 \checkmark$$

$$5 - x = 7$$

$$\downarrow$$

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

$$\downarrow$$

$$x = -2$$

ch

$$5 + (+2)$$

$$7 = 7 \checkmark$$

$$-2 + 4x = -22$$

$$\downarrow$$

$$\frac{4x}{4} = \frac{-20}{4}$$

$$\downarrow$$

$$x = -5$$

ch

$$-2 + 4(-5)$$

$$-2 + -20$$

$$-22 = -22 \checkmark$$

$$\frac{x}{4} - 5 = -7$$

$$\downarrow$$

$$\frac{x}{4} = -2$$

$$\downarrow$$

$$x = -8$$

$$\frac{1}{4}x - 5 = -7$$

$$-\frac{p}{3} + 1 = -4$$

$$\downarrow$$

$$\frac{-p}{3} = -5$$

$$\downarrow$$

$$p = 15$$

ch

$$-\frac{15}{3} + 1$$

$$-5 + 1$$

$$-4 = -4 \checkmark$$

$$-4 = 3 + \frac{k}{7}$$

$$\downarrow$$

$$-7 = \frac{k}{7}$$

$$\downarrow$$

$$-49 = k$$

$$\frac{-x}{12} - 6 = 4$$

$$\downarrow$$

$$\frac{-x}{12} = 10$$

$$\downarrow$$

$$x = -120$$

Show You Know

Solve & Check

$$4x + 5 = -3$$

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

$$x = -2$$

$$-3 - 2x = -11$$

$$-2x = -8$$

$$x = 4$$

$$4 + \frac{q}{3} = -2$$

$$q = -18$$

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

$$b = -15$$

Practice: pg. 204/#3 (ignore "model"), 5 – 7, 9 – 11 *write down question and clearly show all solving steps