

EQUATIONS REVIEW

Name: Key

Date: _____

ONE STEP EQUATIONS
SHOW ALL WORK

- 1) What is happening to the variable?
- 2) What is the opposite of that?
- 3) Do the opposite to both sides of the equation.

Solve

$$1 \quad x + 19 = 53$$

$$\begin{array}{r} -19 \quad | \quad -19 \\ \hline x = 34 \end{array}$$

$$2 \quad x - 4 = 32$$

$$\begin{array}{r} +4 \quad | \quad +4 \\ \hline x = 36 \end{array}$$

$$3 \quad 8 + x = 13$$

$$\begin{array}{r} -8 \quad | \quad -8 \\ \hline x = 5 \end{array}$$

$$4 \quad \frac{19x}{19} = \frac{38}{19}$$

$$\begin{array}{r} \hline x = 2 \end{array}$$

$$5 \quad \frac{96}{4} = \frac{4x}{4}$$

$$\begin{array}{r} \hline 24 = x \end{array}$$

$$6 \quad \frac{x}{17} = 3$$

$$\begin{array}{r} \hline x = 51 \end{array}$$

$$7 \quad \frac{1.2x}{1.2} = \frac{2.4}{1.2}$$

$$\begin{array}{r} \hline x = 2 \end{array}$$

$$8 \quad 96 = 3 + x$$

$$\begin{array}{r} -3 \quad | \quad -3 \\ \hline 93 = x \end{array}$$

$$9 \quad (4.5)2.2 = \frac{x(4.5)}{4.5}$$

$$\begin{array}{r} \hline 9.9 = x \end{array}$$

CROSS MULTIPLY

- 1) Make a cross.
- 2) Multiply the pair, divide the spare.

Solve by using cross multiply (round to the nearest tenth, if necessary)

$$19 \quad \frac{2}{7} \times \frac{6}{x}$$

$$\frac{2x}{2} = \frac{42}{2}$$

$$x = 21$$

$$20 \quad \frac{14}{x} \times \frac{7}{3}$$

$$\frac{7x}{7} = \frac{42}{7}$$

$$x = 6$$

$$21 \quad \frac{x}{5} \times \frac{12}{20}$$

$$\frac{20x}{20} = \frac{60}{20}$$

$$x = 3$$

MULTI- STEP EQUATIONS

SHOW ALL WORK

- 1) Expand any brackets (distributive property).
- 2) Collect like terms on each side.
- 3) Get the variable to only one side
- 4) What two things are happening to the variable?
- 5) Do the add/subtract step first by doing the opposite to both sides.
- 6) Then do the mult/divide step by doing the opposite to both sides.

$$25 \quad 3x + 5 = 5x - 7$$

$$\begin{array}{r} -5x \\ -2x + 5 = -7 \\ \hline -2x = -12 \\ \hline x = 6 \end{array}$$

$$26 \quad -x + 4 = -4x - 8$$

$$\begin{array}{r} +4x \\ 3x + 4 = -8 \\ \hline 3x = -12 \\ \hline x = -4 \end{array}$$

$$27 \quad -4(x - 5) = x + 6 - 4x$$

$$\begin{array}{r} -4x + 20 = -3x + 6 \\ +3x \\ -x + 20 = 6 \\ -20 \\ -x = -14 \\ \hline x = 14 \end{array}$$

$$28 \quad -(2x + 3) = 5(3 - x)$$

$$\begin{array}{r} -2x - 3 = 15 - 5x \\ +5x \\ 3x - 3 = 15 \\ +3 \\ 3x = 18 \\ \hline x = 6 \end{array}$$

$$29 \quad 3(x-2) + 4x = -2(x-6)$$

$$\underline{3x} - 6 + \underline{4x} = -2x + 12$$

$$7x - 6 = -2x + 12$$

$$+2x \quad +2x$$

$$9x - 6 = 12$$

$$+6 \quad +6$$

$$\underline{9x} = \underline{18}$$

$$x = 2$$

$$30 \quad 12 = \frac{3x}{2}$$

$$(2) 12 = \frac{3x(2)}{2}$$

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

$$8 = x$$

$$31 \quad \frac{-7x}{2} + 18 = 4$$

$$-18 \quad -18$$

$$\frac{-7x(2)}{2} = -14(2)$$

$$\frac{-7x}{-7} = \frac{-28}{-7}$$

$$x = 4$$

$$32 \quad 2p^2 + 5 = 37$$

$$-5 \quad -5$$

$$\frac{2p^2}{2} = \frac{32}{2}$$

$$p^2 = 16$$

$$\sqrt{p^2} = \pm\sqrt{16}$$

$$p = 4, -4$$

$$33 \quad 17 = 5 + 3(x-1)$$

$$17 = 5 + 3x - 3$$

$$17 = 3x + 2$$

$$-2 \quad -2$$

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

$$5 = x$$