

# 5.4 Solving Proportions

EQ: In what ways can you solve proportions?

Three methods of solving proportions:

- ① mental math (finding a pattern - 5.3)
- ② multiplication (the loop)
- ③ Cross product (cross multiplication)

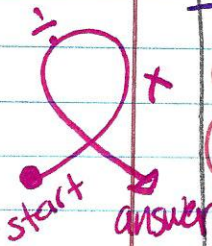
Example 1: Solve using mental math.

$$\frac{3}{4} = \frac{12}{y}$$

$\xrightarrow{\times 4}$   $\xrightarrow{\times 4}$

$y = 16$

Example 2: Solve using multiplication (loop)



- ① multiply
- ② divide
- ③ answer

$$\frac{3}{4} = \frac{12}{y}$$

*multiply* (3 to 12)  
*divide* (4 to y)  
start → answer

$$4 \times 12 = 48$$
$$48 \div 3 = 16$$

$y = 16$

Example 3: Solve using cross multiplication

$$\frac{3}{4} = \frac{12}{y}$$

$3y = 48$

$$\frac{3y}{3} = \frac{48}{3}$$

$y = 16$

Example 4: Solve.

$$\frac{5}{2} = \frac{x-2}{4}$$
$$2(x-2) = 20$$
$$2x - 4 = 20$$
$$+4 \quad | \quad +4$$
$$\frac{2x}{2} = \frac{24}{2}$$

$x = 12$