

5.4 Solving Proportions p. 5 12/12

E.Q: What different strategies can we use to solve proportions?

* multiply \swarrow or \nwarrow side \leftrightarrow side or $\frac{\text{top}}{\text{bottom}}$

* simplify, then multiply

* X-multiply * isolate the variable

Ex. 1 multiply side \leftrightarrow side

$$\frac{5}{7} = \frac{x}{21} \quad x=15$$

$\times 3$

Ex. 2 divide $\left(\frac{\text{top}}{\text{bottom}} \right)$

$$\frac{y}{6} = \frac{2}{4} \quad y=3$$

$\div 2$

Ex. 3 simply then multiply

$$\frac{6}{5} = \frac{a}{15} \quad a=18$$

$\times 3$

Ex. 6 X-Product w/ a Coefficient

$$\frac{3y}{10} = \frac{7}{4} \quad 4(3y) = 10(7) \quad 12y = 70 \quad y = 5.8$$

Ex. 4 X-multiply

$$\frac{x}{8} = \frac{1}{10}$$

$$10x = 8 \cdot 1$$

$$\frac{10x}{10} = \frac{8}{10} \quad x = 0.8$$

Ex. 5 Isolate the Variable

$$\frac{b}{4} = \frac{2}{3} \cdot 4 \quad b = \frac{8}{3}$$

leave improper

Ex. 7

$$\frac{9}{r+1} = \frac{3}{4}$$

$$3(r+1) = 9 \cdot 4$$

$$3r + 3 = 36$$

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

$$r = 11$$

$$\frac{9}{r+1} = \frac{3}{4} \quad r=11$$