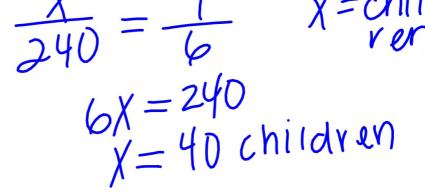
1.) On Thursday, 240 adults and children attended a show. The ratio of adults to children was 5 to 1. How many children attended the show?



2.) On an architect's drawing of the floor plan for a house, 1 inch represents 3 feet. If a room is represented on the floor plan by a rectangle that has sides of lengths 3.5 inches and 5 inches, what is the actual floor area of the room, in square feet?

lin 3ft 3.5 * 34 = 10.5 5 * 34 = 16157.5 %

Geometry

7-1: Ratios and Proportions

Objective: I can write ratios and solve proportions.

- is a comparison of two quantities. We can write a ratio 3 different ways:

- 3)

Example 1: A photo that is 4 inches wide and 6 inches high is enlarged to a poster that is 2 feet

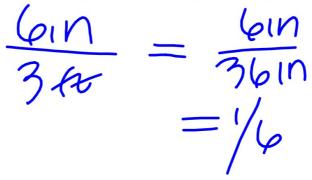
wide and 3 feet wide. What is the ratio of the width of the photo to the width of the poster?

WIGHT OF Photo

II II POSHOT

$$= \frac{410}{240}$$
 $= \frac{410}{240}$

QC 1: What is the ratio of the height of the photo to the height of the poster?



A proportion in 2 ways:

$$\frac{d}{b} = \frac{d}{d}$$

$$\alpha : b = c : d$$

There are many ways to write a proportion so that it is equivalent. You can flip the fractions, switch sides, etc. Let's look at a few ways we could change the proportion and keep both sides equal to each other.

Properties of Proportions

$$\frac{a}{b} = \frac{c}{d}$$
 is equivalent to

(1)
$$ad = b \cdot c$$
 (3) $b = d$
(2) $a = b$
(4) $a+b = d$

$$(2) \frac{a}{c} = \frac{b}{d} (4) \underbrace{a+b}_{a+b} =$$

$$\frac{c+d}{d}$$

To solve a proportion, we use a property called **CVOSS** Let's see why this works:

Does
$$\frac{2}{3} = \frac{8}{12}$$
?

Does
$$\frac{4}{9} = \frac{7}{16}$$
?

a)
$$6x = 5$$

b)
$$\frac{y}{x} = \frac{6}{2}$$

c)
$$\frac{x}{5} = \sqrt{\frac{x}{5}}$$

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

$$\frac{m}{n} = \frac{4}{11}$$

QC 2: Write three proportions that are equivalent to
$$\frac{m}{4} = \frac{n}{11}$$

$$\frac{m}{n} = \frac{4}{11} \quad \frac{m+4}{4} = \frac{n}{11} \quad ||m| = 4n$$

$$\frac{4}{m} = \frac{11}{n}$$

$$11m = 4n$$

$$\frac{4}{m} = \frac{11}{n}$$

You can solve a proportion by cross multiplying to find the value of the variable.

Example 3: Solve each proportion.

A)
$$\frac{x}{5} = \frac{12}{7}$$
 $7x = 60$ $1 = \frac{60}{7}$

B)
$$\frac{5}{z} = \frac{20}{3} 15 = 20$$

$$2 = \frac{3}{4}$$

C)
$$\frac{y+3}{8} = \frac{y}{4}$$
 $4(y+3) = 89$ $4(y+3) = 89$ $18n = 6n + 36n = 6n +$

D)
$$\frac{18}{n+6} = \frac{6}{n}$$

 $18n = 6n + 3k$
 $12n = 3k$
 $n = 3$

Classwork: Section 7.1 Worksheet (due before you leave)

HW #8 -

Section 7-1

IXL #5 - A.1 & A.2

Pages 366-368

(due Friday)

Problems: 3 - 5, 7, 15, 18, 46