

2.3 Verbal Problems Involving Ratio

recall: a ratio is: a comparison of two numbers

*equivalent ratios - are like equivalent fractions

Ratio Word Problems

let x = ratio factor
multiply each part of the given ratio
by x to identify the items.

Ex: 6:7
let x = ratio factor
 $6x = \dots$
 $7x = \dots$

Examples:

- Two numbers are in a ratio of 5:6. If the sum of the numbers is 66, find the larger number.

let x = the ratio factor

$5x$ = smaller #

$6x$ = larger #

$$5x + 6x = 66$$

$$11x = 66$$

$$x = \frac{66}{11}$$

$$x = 6$$

$6x$

$6(6)$

36

- Two numbers have the ratio 7:5. Their difference is 12. Find the numbers.

let x = ratio factor

$7x$ = larger #

$5x$ = smaller #

$$7x - 5x = 12$$

$$2x = 12$$

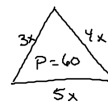
$$x = \frac{12}{2}$$

$$x = 6$$

$5x$	$7x$
$5(6)$	$7(6)$
30	42

30, 42

- The perimeter of a triangle is 60 ft. If the sides are in the ratio 3:4:5, find the length of each side of the triangle.



let x = ratio factor

$3x$ = 1st Side

$4x$ = 2nd Side

$5x$ = 3rd Side

$$3x + 4x + 5x = 60$$

$$12x = 60$$

$$x = \frac{60}{12}$$

$$x = 5$$

$3x$	$4x$	$5x$
$3(5)$	$4(5)$	$5(5)$
15ft	20ft	25ft

- The length@width ratio of a rectangle is 5:2. Find the length if the perimeter is 28 cm.



let x = ratio factor

$5x$ = length

$2x$ = width

$$2l + 2w = P$$

$$2(5x) + 2(2x) = 28$$

$$10x + 4x = 28$$

$$14x = 28$$

$$x = \frac{28}{14}$$

$$x = 2$$

$5x$
$5(2)$

10cm

- In a basketball foul-shooting contest, the points made by Sam and Wilbur were in the ratio 7:9. Wilbur made is 6 more points than Sam. Find the number of points made by each player.

let x = ratio factor

$7x$ = # of pts Sam scored

$9x$ = # of pts Wilbur scored

$$9x = 7x + 6$$

$$9x - 7x = 6$$

$$2x = 6$$

$$x = \frac{6}{2}$$

$$x = 3$$

$7x$	$9x$
$7(3)$	$9(3)$
21	27

Sam scored 21pts
Wilbur scored 27pts

HOMEWORK

Worksheet - HW 2.3 Ratio Word Problems