

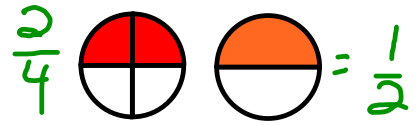
LESSON # 17 page 118 & 119

Proportional Situations

Situations that result in equivalent ratios or rates are called proportional situation

Extremes and Means

A proportion is composed of 4 terms.



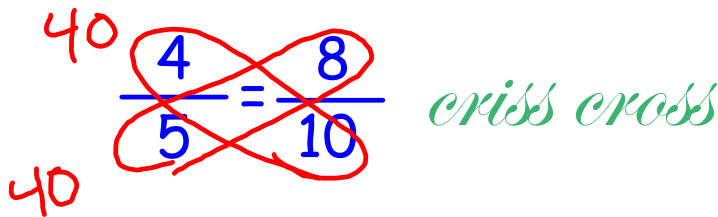
$$\frac{A}{B} = \frac{C}{D}$$



The name extremes is given to the A & D terms.
 The name means is given to the B & C terms.

Check if proportional..... 1 method is.....

The product of the means is equal to the product of the extremes.



In a table of values, the numbers from both the 1st and 2nd row form a proportional series of numbers.

The numbers in the second row are obtained by multiplying the numbers of the first row by a number called the proportionality coefficient.

			$\frac{y}{x} = \frac{2.5}{1}$	$\frac{5}{2}$	$\frac{7.5}{3} = 2.5$	$\frac{y}{x}$
X	Time (hours)	0	1	2	3	n
Y	Cost (\$)	0	2.5	5	7.5	

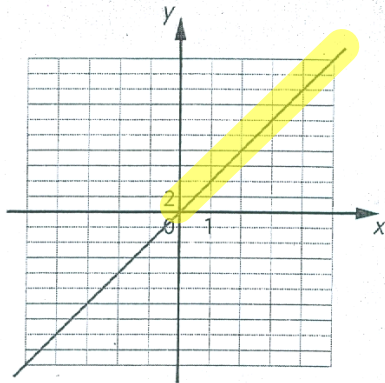
Rule ?? $2.5n$
REVIEW 6.4

Graphs

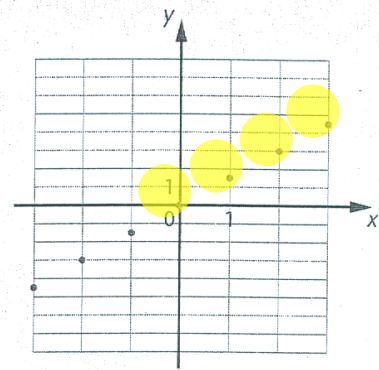
The graph of a proportional situation is a straight line (oblique) that passes through the origin of the cartesian plane, or points on a line that passes through the origin of a cartesian plane.

Ex.:

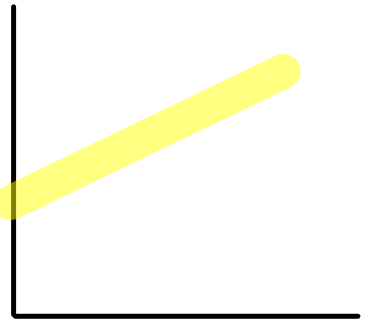
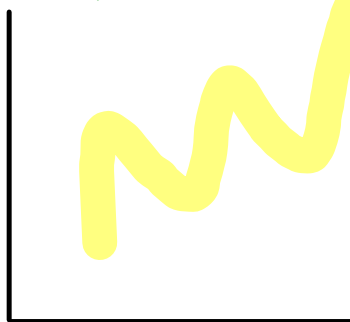
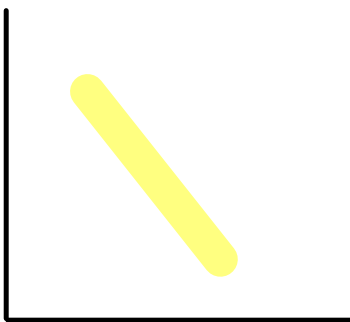
Graph of a proportional situation using a line



Graph of a proportional situation using points



NOT prop.



Math 216

Ratios and Rates
Proportions!

SHOW WORK Name: _____

1. If two trucks have 36 wheels, how many wheels will nine trucks have?

2. If you earn \$45 in 5 h, how much will you earn in 8h?

3. For every 35kg of iron within the Earth, there are 30kg of oxygen and 15kg of silicon. Express the following ratios (using correct math notation) in lowest terms.
 - a) mass of oxygen to mass of silicon _____
 - b) mass of silicon to mass of iron _____
 - c) mass of iron to mass of oxygen _____

4. In one year, the Earth averages 2 earthquakes of magnitude 8, 20 earthquakes of magnitude 7, 100 earthquakes of magnitude 6. Write the following ratios in lowest terms.
 - a) earthquakes of magnitude 8 to earthquakes of magnitude 7

 - b) earthquakes of magnitude 6 to earthquakes of magnitude 7

 - c) earthquakes of magnitude 6 to earthquakes of magnitude 8

5. Find each of the following ratios in lowest terms for the numbers 1,2,3,...,99 and 100.
 - a) the number of even numbers to the number of odd numbers

 - b) the number of multiples of 10 to the number of multiples of 5

 - c) the number of multiples of 7 to the number of multiples of 3

6. State each ratio by first expressing both quantities in the same unit.

ex: 1 cm to 2 m > 1 cm to 200cm 1 : 200

a) 1 day to 1 year _____ _____

b) 1 min to 1h _____ _____

c) 2 L to 500ml _____ _____

7. Determine whether the ratios in each pair are equivalent. Show Work

a) 2 : 3 and 4 : 9

b) 1 : 2 and 2 : 1

c) 5 : 8 and 15 : 32

d) 20 : 5 and 8 : 2

8. The ratio of the length of the human body to the length of the head is 8 : 1. What is the length of the head of a person who is 168 cm tall?

Show Work

Ans: _____

9. Sumi drove at 75km/h. How far did she drive in 4h? Show Work

Ans: _____

9. An aircraft flies 4900 km in 7 h. How far will it fly in 4.5 h? Show Work

Ans: _____

10) Which is a better buy?

a) 8 granola bars for \$1.89 or 12 for \$2.89 Show Work

b) \$13.00 for 10 bus tokens or \$4.50 for 3 tokens. Show Work

c) 200 sheets of paper for \$1.98 or 500 sheets for \$4.49 Show Work