

compares to another, often expressed as a ratio or fraction. Example:

curriculum.

Note that "Understanding Proportion" is a sub topic and you can also

"Operations On Numbers And Calculator Skills" which is one of the

recommended learning topics in the CAPS Mathematical Literacy

access more notes, questions and answers under the main topic

this nature.

This relationship between the two quantities remains constant.

0

0

If one sweet costs R2, what will 5 sweets cost? The table below shows the cost of sweets:

The following is a constant ratio between the number of sweets and the cost:

Since $\frac{2 \times 6}{5 \times 6} = \frac{12}{30}$

10

 $Since \ \frac{3,5\times 2}{14\times 2}$

$$28 \div 7$$
 $= \frac{1}{4}$

acts are identical
 $e. g \, \frac{a}{b} \, = \, \frac{c}{d}$
 $a \times d \, = \, b \times c$

Direct proportion occurs when two quantities increase or decrease at the same rate. In other words, if one quantity doubles, the other also doubles.

Number of

sweets

Cost (R)

 $\frac{2}{1} = \frac{4}{2} = \frac{6}{3} = \frac{8}{4} = \frac{10}{5} = 2$

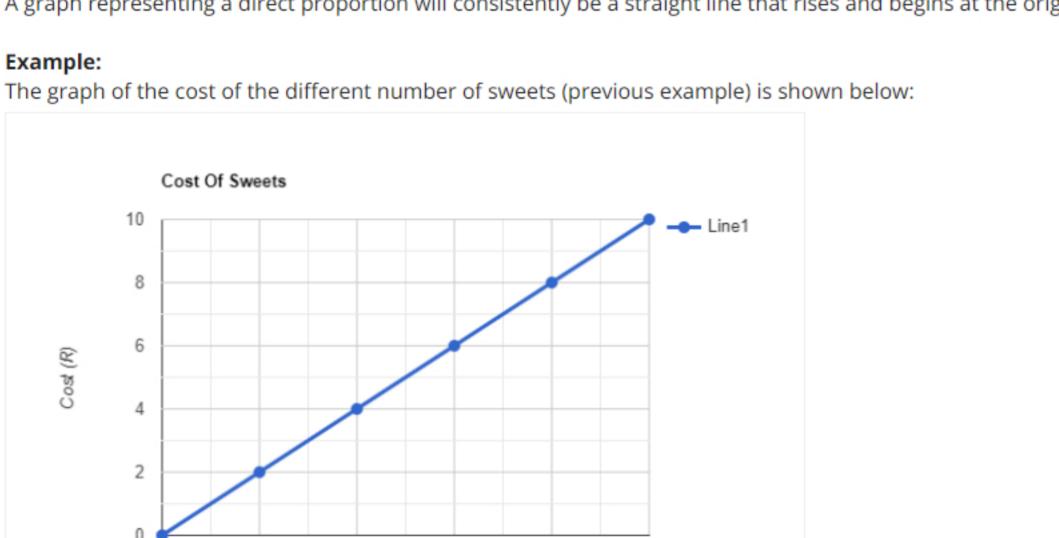
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Hint: multiply by 7 (why?)

 $25 \times 'variable?' = 175$

 $25~\times~7~=~175$

7 is the constant ratio

Therefore $x = 2 \times 7 = 14$

for x:

 $25 \times x = 2 \times 175$

25x = 350

Draw a table and enter the given values. Next, calculate the constant product by multiplying both quantities. Use this constant product to determine

 $6 \times 5 = 30$

12 x ? = 30

 $30\ is\ the\ constant\ product$

Number of days = $30 \div 12 = 2,5 \text{ days}$

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1.1 Sam has offered his assistance in refurbishing a barbershop. If he were to handle the entire renovation by himself, it would require 12 hours.

1.1.2 Based on the data you provided in Question 1.1, create a graph showing the estimated duration for completing the barbershop renovations.

A swimming pool fills up in 8 hours with a water flow rate of 120 liters per hour. How much time would it take to fill the pool if the water flow rate were

Examination rules specify that each learner

is to be given a seating area in the

examination venue of at least $1,6 m^2$

Calculate the maximum number of

learners that can be accommodated

in an examination venue with an

area of 96 m^2 if the examination

rules are adhered to.

1.1.1 Complete the table below, showing the time it would take to renovate the crèche, depending on the number of people

12

?

12

Rewrite the equation as a ratio and find the missing value (you can also check out **Understanding Ratios** to understand more about the following examples)

Hint: divide both numbers by 2 (why?)

2 : 9 $4 \div 'Variable?' = 2$ $4 \div 2 = 2$ 2 is the constant ratioTherefore $y \div 2 = 9$ $y = 9 \times 2$ y = 18METHOD 2: Cross-Multiplication

x = 14for y: $y \times 2 = 4 \times 9$ 2y = 36y = 18Calculations with ratios in Indirect/inverse Proportion

Workers learn to respect and trust each other.

the unknown value. Then, utilize this unchanging value to determine the unknown variable.

Example: If it takes 6 painters 5 days to paint a house, how long will it take for 12 painters to complete the same task?

6

5

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See Answer A 480 kg sack of avocados costs R3,600. Determine the cost of a 200 kg sack of avocados. See Answer If twelve girls are assigned to clean the school playground and it takes them 3 hours to finish, how much time would it take if there were only eight girls?

4.1 How much space is needed to accommodate 52 students during an exam?

25 20 Working Hours

Landscaping Business Planning

10 5 10 2 4 8 Workers In Teams Understanding Proportion Landscaping Business Graph 5.1 How long will it take THREE workers to offer landscaping services to the same measured areas? 5.2 How many employees are needed to complete the same client workload within exactly six hours? 5.3 Calculate and estimate the amount of time needed for four workers to provide services. See Answer

Given That Mr. Sam cultivates spinach and potatoes in his vegetable garden. He packages them in boxes for sale. The table below illustrates the distribution of spinach and potatoes in each box: Relationship between the number of spinach and potatoes in each box Number of boxes 1 2 5 Number of Spinaches 2 4 10

Α

60

В

24

144

15

30

180

6.2.2 B 6.3 A client ordered several boxes of vegetables, which included 12 spinach items. How many potatoes were there in total in these boxes?

12

6.4 Based on the provided table, create a graph illustrating the quantity of potatoes contained in each box.

What is Proportion?

Proportion when calculating and solving questions related to Direct,

Indirect And Inverse Proportion And Proportion Graphs . Make sure to

practice all the questions so that you get used to solving problems of

Proportion is a mathematical relationship that shows how two quantities are related in terms of size or amount. It describes how one quantity

If two ratios are proportional, their cross products are identical Direct proportion

Direct Proportion Graphs A graph representing a direct proportion will consistently be a straight line that rises and begins at the origin. Example: Cost Of Sweets

How to calculate with ratios in direct proportion How to find a missing value in purely mathematical proportion equations can be approached in two distinct ways: METHOD 1: Multiplication/Division by the 'variable'

Example1:

8

6

2

Number of sweets

Direct Proportion Graphs

Example2:

Always remember that when ratios are in proportion, their cross products are equal. Set the cross products equal and solve the resulting equation. Example:

Always remember, there are a couple of approaches you can take when dealing with inverse or indirect proportions: METHOD 1: Inverse Multiplication/Division Operations To determine the unknown variable, list the ratios, then scale up one set of quantities and scale down the other set. Example: Given that 6 painters can complete the painting of a house in 5 days, how many days would it take for 12 painters to finish painting the same house? painters: days 6:5

12:?

= 2,5 days

Hint: Multiply by 2

Number of days = 5 + 2

Number of painters

Number of days

METHOD 2: Table with a constant product

Questions And Answers

1

12

Number of people

Time taken

(hours)

See Answer

See Answer

doubled?

Mrs. James, who owns a landscaping business, utilizes the chart below to estimate the time required for various teams to provide services to each

customer.

30

See Answer

4.2

6.1 Each pack of spinach weighs approximately 2 kg on average, while each potato weighs around 0.12 kg. Determine the combined average weight of the spinach packs and potatoes in a single box.

See Answer

Number of Potatoes

6.2 Determine the following missing values: 6.2.1 A