5

2

Indirect Proportion



Ratio

1



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INDIRECT PROPORTION

Learning Objectives

1. explain the comparison of values and determine the value of x in the comparison of valuesur new classmates.

2. solve problems related to equivalent comparisons using tables, graphs and equations

3. Distinguish equivalent and inverse ratios using data tables, graphs and equations



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PROBLEM 1

Indirect Proportion

Attention to the following problems

Mrs.Diana has a jar of candy containing 200 pieces. The candy will be distributed to her students. She tries to make a connection between many children and many received, She writes as below.





To known that :

Number of students (x)	Amount of Candies (y)
8	...
20	...
25	...
40	...

Let's Solve Problem

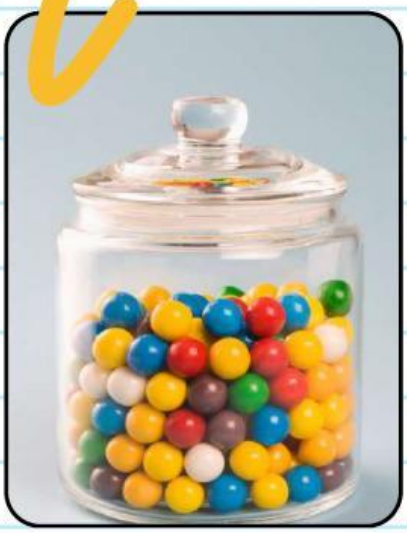
Help Mrs.Diana's complete the table. Determine the equation that shows the ratio of the number of children and the amount of candy received

Based on the table above, it shows that

the more .....,

and so the more .....

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PROBLEM SOLVING

Equation that shows the relationship between the number of children and the amount of candy:

- $\frac{x}{y} = \frac{8}{\quad}$, $x \times y = \cdots \times \ldots = \cdots$
- $\frac{x}{y} = \frac{20}{\quad}$, $x \times y = \cdots \times \ldots = \cdots$
- $\frac{x}{y} = \frac{25}{\quad}$, $x \times y = \cdots \times \ldots = \cdots$
- $\frac{x}{y} = \frac{40}{\quad}$, $x \times y = \cdots \times \ldots = \cdots$

comparison value of : $\frac{x}{y} = -$

But, the resultsof $x \times y$ is ....

So, in proportion ..... this conditionis .....

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PROBLEM 2

Indirect Proportion

Attention to the following problems

A boys' dormitory has a 1 month supply of rice for 40 childrens. If the population of the boys' dormitory increases by 8 children, how many days will the rice run out?



To known that :

Number of childrens (x)	Amount of Times (y)
40	30 days
...	...

Asked :

How many days will rice run out if the number of residents increases by 8 people?

Answer :

$$\frac{x_1}{x_2} = \frac{y_2}{y_1}$$

$$\frac{40}{\text{—}} = \frac{\text{—}}{\text{—}}$$

$$\text{—} x \ \ldots = \cdots$$

$$= \text{—}$$

$$=$$ And so,

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PROBLEM 3

Indirect Proportion

Attention to the following problems

a car was driving from Curup towards Bengkulu City. The car takes 4 hours, with an average speed of 60 km/hour. If the car's speed is 40 km/hour, how long does it take the car to arrive in Bengkulu City? (Solve using tables, graphs and equations)





To known that :

4 hours for 60 km/hours.

Asked :

If the speed is 40 km/h how long will it take?

1 Answer using a table :

TABLES

Time (Hour/ x)	Speeds (Km/jam (y))
4	60
...	...

Find the time required if the speed is 40 km/hour

$\frac{x_1}{y_2} \times \quad =$

So, the time required if the speed is 40 km/hour is

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2 Answer using a Graph :

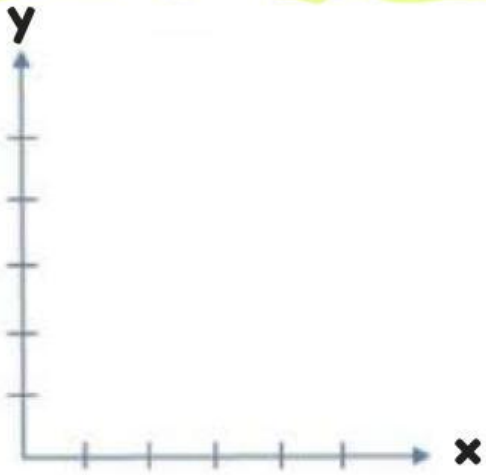
Based on the problem above, we obtain a table that shows the relationship between speed and time traveled.





Waktu (x)	2	4	6	8	10
Kecepatan (y)		60		30	

The graphic image below shows the graph of the comparison table.



3 Answer using a Equation :

To know : 4 hour = 60 km/hour
x hour = 40 km/hour

Based on the comparison, it is obtained

$$\frac{x_1}{x_2} = \frac{y_2}{y_1} \rightarrow \quad \times \quad = \quad \times$$

$$x_2 = \frac{x_1 \times y_1}{y_2}$$

$$x_2 = \frac{\times}{}$$

$$x_2 = \frac{}{}$$

So, the time required if the speed is 40 km/hour is

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