

Problems in Comparing Answers and Scales: An In-Depth Discussion

Question No. 1

Father will distribute Rp 240,000.00 to Amir and Budi in the ratio of 3: 5.

Find the amount of money received by Amir and Budi respectively!

Discussion

Amir: Budi = 3 : 5

Total money = Rp 240,000.00

The money received by Amir is

$$\frac{3}{8} \times \text{Rp } 240,000.00 = \text{Rp } 90,000.00$$

The money received by Budi is

$$\frac{5}{8} \times \text{Rp } 240,000.00 = \text{Rp } 150,000.00$$

Notes: The number 8 is obtained from 3 + 5

Question No. 2

Father will distribute Rp 320,000.00 to Amir, Budi and Charli in the ratio of 3 : 5 : 8. Determine the amount of money received by Amir, Budi and Charli respectively!

Discussion

Amir: Budi : Charli = 3 : 5 : 8 Total
money = Rp 320,000.00

The money received by Amir is

$$\frac{3}{16} \times \text{Rp } 320,000.00 = \text{Rp } 60,000.00$$

The money received by Budi is

$$\frac{5}{16} \times \text{Rp } 320,000.00 = \text{Rp } 100,000.00$$

The money received by Charli is

$$\frac{8}{16} \times \text{Rp } 320,000 = \text{Rp } 160,000.00$$

Notes: The number 16 is obtained from 3 + 5 + 8

Question No. 3

City A and city B are 60 km apart. Determine the distance between the two cities on a map with a scale of 1: 1,200,000, expressed in cm!

Discussion

Actual distance = 60 km = 60,000 m = 6,000,000 cm Scale
= 1 : 1,200,000

Distance on the map = 6,000,000 : 1.200.000
= 5 cm

Problem No. 4

Andi's father designed a house by drawing a plan with a scale of 1: 20. If the width of the house in the plan is 25 cm, determine the actual width after the house is built, express it in meters!

Discussion

Plan scale = 1: 200
Distance on plan = 25 cm
Actual distance = 25 m x 20
= 500 cm = 5 m

Problem No. 5

A racing car covers 60 km in 30 minutes. How many hours does it take the car to cover 180 km?

Discussion

60 km → 30
minutes 180 km →
.....minut
es

The logic is that the time required will increase as the distance increases, so use a like-for-like comparison:

$t/30 = 180/60$
 $t = \frac{180}{60} \times 30 = 3 \times 30 = 90$ minutes
90 minutes is 1.5 hours

Problem No. 6

Amir provides one plastic bag of food for his 10 fish which runs out in 12 days. If Amir's fish now number 25, estimate how many days the plastic bag of food provided by Amir will run out!

Discussion

10 heads → 15
days 25 heads →
.....day
s

As the number of fish increases, the food will run out faster, in less than 15 days. Use inverse value comparison:

$h/15 = 10/25$
 $h = (\frac{10}{25}) \times 15$
 $h = 6$ days

Question No. 7

Charli's father wants to build a house that will be done by 25 workers with an estimated completion time of 60 days. If the work is done by 45 workers, estimate in how many days the work will be completed!

Discussion

25 workers → 60

days 45 workers →

..... days

Of course, the result will be smaller than 60 days, because there are more workers.

Use inverse value comparison

$$h \times 60 = 25 \times 45$$

$$h = \frac{25}{45} \times 60$$

$$h = 37.5 \text{ days}$$