

Understanding the Challenges of Comparing and Rating Scale Answers

A	B
a_1	b_1
a_2	b_2

In an inverse value comparison, :

$$a_1/a_2 = b_2/b_1$$

Problem and Discussion on Scale and Comparison Class VII Junior High School

1. The distance between the two cities on the map is 12 cm. The actual distance between the two cities is 144 km. Determine the size of the scale!

Solution:

Unknown:

Distance on the map = 12 cm

Actual distance = 144 km = 14,400,000 cm

Ask:

Scale

Answer:

r:

Scale = Distance on the map : Actual distance

Scale = 12 : 14,400,000

Scale = 1 : 1,200,000

Thus, the scale is 1: 1,200,000.

2. The distance between two cities on the map is 17 cm. On the map, it is known that the scale is 1:

1,500,000. What is the original distance between the two cities? Solution:

Unknown:

Distance on the map = 17 cm

Scale on the map = 1: 1,500,000

Question:

Actual distance

Answer:

Scale = Distance on the map : Actual distance

Actual distance = Distance on map : scale

Actual distance = 17 : (1 : 1,500,000)
Actual distance = 17 x 1,500,000
Actual distance = 25,500,000 cm
Actual distance = 255 km

Thus, the actual distance is 255 km.

3. The distance from Palembang to Bengkulu is about 450 km. If Cemerlang Junior High School students are asked to draw a map with a scale of 1: 75,000,000, then what is the distance between Palembang and Bengkulu on the map?

Solution:

Unknown:

Actual distance = 450 Km = 45,000,000 cm
Scale = 1:75,000,000

Asked:

Distance on

the map

Answer:

Scale = Distance on the map : Actual distance
Distance on map = Scale x Actual distance

Distance on map = (1 : 75,000,000) x 450,000,000cm
Distance on map = 6 cm

Therefore, the distance that the students of Cemerlang Junior High School have to make is 6 cm.

4. A rectangle is 50 cm long and 12.5 cm wide. Find the ratio between the perimeter and the length of the rectangle!

Solution:

Unknown:

Length = 50 cm

Width = 12.5

cm Ask:

The ratio of the perimeter to twice the length of the rectangle

Answer:

Perimeter of rectangle = 2 x (Length + Width)

Perimeter of rectangle = 2 x (50 cm + 12.5 cm)

Perimeter of rectangle = 2 x (62.5 cm)

Perimeter of the rectangle = 125 cm

Twice the length = 2 x the length of the rectangle

Twice the length = 2 x 50cm

Twice the length = 100cm

Comparison = Perimeter : Twice the length of the rectangle
Comparison = 125 cm : 100 cm
Comparison = 5 : 4

Therefore, the ratio is 5:4.