

13 Maths
Direct and Inverse Proportions

Grade - 8

Practice Worksheet

Short answer

- The map of Tripura is drawn to the scale 1:10000000, where scaling is done in centimeters. Thus, if the actual distance is 1,00,00,000 cm, then on the map it is represented as 1 cm. If the distance between two cities A and B is 250 km, find the distance between the two cities on the map.
- Adil reaches his school in 40 minutes if he rides his bicycle at an average speed of 15 km/h. What should be the average speed of the bicycle if he wishes to reach his school in 30 minutes?
- A tank can be filled by one pipe in 4 hours and another pipe in 3 hours. In how much time will the tank be filled if both the pipes are opened together?
- Find whether the two variables x and y are in direct proportion.

X	5	10	15	20	25	30
Y	7	14	21	28	35	42

- In the following table, find whether x and y vary inversely.

x	4	6	12	20
y	30	20	10	6

We know that if the product $x \times y$ remains constant for all values of x and the corresponding values of y , then x and y will vary inversely. Let us find the product $x \times y$ for all values:

$$4 \times 30 = 120; \quad 6 \times 20 = 120;$$

$$12 \times 10 = 120; \quad 20 \times 6 = 120$$

Since the product $x \times y$ is constant, x and y vary inversely.

- A car is moving at a constant speed of 40 km/h. Find the distance it will cover in 15 minutes.

Long answer

- Rs.500 is invested for three years at the rate of 5% p.a. Find out the simple interest and compound interest (compounded annually) and comment whether the two interests vary directly with the time or not.
- Rita, Nida, and Meena together complete a piece of work in 4 days. Rita alone completes it in 12 days and Nida alone in 15 days. How many days will Meena take to complete the work on her own?
- In a fort, there are sufficient provisions for 20 days for 1000 men. A few men left and the provisions lasted for 25 days. How many men left?
- Five buckets of paint cost Rs.1200, each of these contain 1.2 L of paint. How much will seven buckets, each containing 1.5 L of paint, cost?

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5. A tank can be filled by pipe A in 16 hours and by pipe B in 18 hours. Pipe C can empty the tank in 24 hours. All the three pipes are opened simultaneously. After 10 hours, pipe C is closed. In how many more hours will the tank be full?
6. A cistern has two inlets A and B which can fill it in 12 minutes and 15 minutes, respectively. An outlet C can empty the cistern in 10 minutes. If all the 3 pipes are opened together in the empty tank, in a many hours will the tank be completely full?
7. A and B can do a piece of work in 25 days and 20 days, respectively. They work together for 5 days and then A leaves. In how many days will the remaining work be finished by B?
8. A and B can complete a work in 12 days, B and C in 15 days, and C and A in 20 days. In how many days will they complete the work (i) together (ii) separately?
9. Varun completes a piece of work in 2 days and Sohan completes the same work in 4 days. If they both work together, in how many days will they complete the work?