Direct and Inverse Proportion

Class 8 – Worksheet

Section A: Fill in the Blanks

(Direct or Inverse Proportion)

1. When the number of items increases, the total cost also increases in _____ proportion.
2. Speed and time are in _____ proportion when distance is fixed.
3. If more workers are employed for the same work, the number of days _____.
4. Cost and quantity are in _____ proportion at a fixed rate.
5. If the number of pipes increases, the time taken to fill a tank _____.

Section B: Direct Proportion Questions

1. If the cost of 5 pens is ₹75, find the cost of 12 pens at the same rate.
2. A car travels 150 km in 3 hours. How much distance will it travel in 7 hours at the same speed?
3. The cost of 8 kg of rice is ₹480. Find the cost of 15 kg of rice.
   If 6 notebooks cost ₹180, find the cost of 20 notebooks.
4. A worker earns ₹900 in 6 days. How much will they earn in 10 days at the same daily wage?

Section C: Inverse Proportion Questions

1. If 4 workers can complete a job in 18 days, how many days will 12 workers take to complete the same job?
2. A train covers a fixed distance in 5 hours at 60 km/h. How long will it take at 75 km/h?
3. If 10 pipes can fill a tank in 8 hours, how long will 5 pipes take?
4. A car completes a journey in 6 hours at a speed of 50 km/h. Find the time taken if the speed is increased to 75 km/h.
5. If 15 workers finish a work in 20 days, find the time taken by 25 workers.

Section D: Table-Based Questions

1. Complete the table if x and y are in direct proportion:

x	3	6	9
y	15	?	?

2. Complete the table if speed and time are in inverse proportion:

Speed (km/h)	40	80
Time (hours)	10	?

Section E: Case-Based Questions

Case 1:
A school buys notebooks at a fixed rate for students.

1. Identify the type of proportion between cost and number of notebooks.
2. If 12 notebooks cost ₹240, find the cost of 30 notebooks.
3. What remains constant in this situation?

Case 2:
A bus travels between two cities covering a fixed distance.

1. Identify the relationship between speed and time.
2. If the bus takes 8 hours at 45 km/h, find the time taken at 60 km/h.
3. Why is inverse proportion used here?

Section F: Higher-Order Thinking Questions

1. If 20 machines produce 600 items in one day, how many items will 30 machines produce in the same time?
2. A group of workers planned to complete a job in 12 days. Due to more workers joining, the job finished in 8 days. Explain the type of proportion involved.
3. Give one real-life example of direct proportion and one example of inverse proportion.

Student Note:
Always check what remains constant before choosing the formula.

Parent Note:

Encourage children to write the relation first. Marks are often given for correct setup in exams.