



INDIAN SCHOOL AL WADI AL KABIR
Class VIII, Mathematics (2025-26)
DIRECT AND INVERSE PROPORTION
 WORKSHEET-1

Multiple Choice Questions

| | | | | | | | | | | | | | | | | |
|-----|--|---------------------------|----|------------------------|---|---------------------------------|---|---------------------------|-----|---|----|----|-----|----|----|----|
| Q.1 | If 5 pencils cost ₹20, how much will 8 pencils cost? | | | | | | | | | | | | | | | |
| | A | ₹30 | B | ₹32 | C | ₹28 | D | ₹40 | | | | | | | | |
| Q.2 | If x and y are directly proportional, then which one is true? | | | | | | | | | | | | | | | |
| | A | $x + y = \text{constant}$ | B | $xy = \text{constant}$ | C | $\frac{x}{y} = \text{constant}$ | D | $x - y = \text{constant}$ | | | | | | | | |
| Q.3 | A car travels 120 km in 3 hours. At the same speed, how far will it travel in 5 hours? | | | | | | | | | | | | | | | |
| | A | 150 km | B | 180 km | C | 200 km | D | 220 km | | | | | | | | |
| Q.4 | A machine takes 6 hours to fill 48 containers. How many containers will it fill in a day? | | | | | | | | | | | | | | | |
| | A | 112 containers | B | 142 containers | C | 182 containers | D | 192 containers | | | | | | | | |
| Q.5 | A recipe uses 500 g of onion for 5 people. How many grams of onion is required for serving 9 people? | | | | | | | | | | | | | | | |
| | A | 800 g | B | 400g | C | 900 g | D | 2,600 g | | | | | | | | |
| Q.6 | If x and y vary directly. $x=16$, when $y=20$. When $x=28$ find the value of y . | | | | | | | | | | | | | | | |
| | A | 35 | B | 45 | C | 40 | D | 30 | | | | | | | | |
| Q.7 | If x and y are directly proportional under the given condition in the table, the constant of variation is: <div><table><tr><td>x</td><td>5</td><td>12</td><td>15</td></tr><tr><td>y</td><td>15</td><td>36</td><td>45</td></tr></table></div> | | | | | | | | x | 5 | 12 | 15 | y | 15 | 36 | 45 |
| x | 5 | 12 | 15 | | | | | | | | | | | | | |
| y | 15 | 36 | 45 | | | | | | | | | | | | | |
| | A | $\frac{2}{3}$ | B | $\frac{1}{3}$ | C | $\frac{1}{4}$ | D | $\frac{1}{5}$ | | | | | | | | |
| Q.8 | For every five days' work, Gokul gets two days of holidays. If he works for 20 days, how many days of holidays he can enjoy? | | | | | | | | | | | | | | | |
| | A | 8 days | B | 5 days | C | 4 days | D | 10 days | | | | | | | | |

| | | | | | | | | |
|------|---|-------------------|-----|--------------------|-----|----------------------------|---|----------------------|
| Q.9 | On a map, 1 cm represents 5 km. If the distance between two cities on the map is 7.2 cm, what is the actual distance between the two cities? | | | | | | | |
| | A | 29 km | B | 30 km | C | 46 km | D | 36 km |
| Q.10 | The perimeter of a square and its side is in: | | | | | | | |
| | A | Direct Proportion | B | Inverse Proportion | C | Neither direct nor inverse | D | Cannot be determined |
| | LONG ANSWER QUESTIONS: | | | | | | | |
| Q.11 | Anu has painted a 40m ² wall and she has used 8 pots of red paint. Jim wants to paint a 25m ² wall. How many pots of paint does he need? | | | | | | | |
| Q.12 | The cost of 8 kg of apples is ₹480. (a) Find the cost of 15 kg of apples. (b) If you have ₹1440, how many kilograms of apples can you buy? | | | | | | | |
| Q.13 | Given that x and y are directly proportional, find the missing values a, b , and c . | | | | | | | |
| | x | 7 | a | 21 | 32 | | | |
| | y | 28 | 52 | b | c | | | |
| Q.14 | A train is moving at a uniform speed of 75 km/hour a) How far will it travel in 20 minutes? b) Find the time required to cover a distance of 250 km. | | | | | | | |
| Q.15 | Raj bought 35 packs of crayon for ₹700. Roy bought 7 packs of the same type of crayons. How much did Roy pay for it? | | | | | | | |
| Q.16 | An electric pole, 14 m high, casts a shadow of 10 m. Find the height of a tree that casts a shadow of 15 m under similar conditions also find the length of the shadow cast by the 63 m high building under similar conditions. | | | | | | | |
| Q.17 | A truck needs 34 litres of diesel for covering 204 km. Find the diesel required by the truck to cover a distance of 300km. | | | | | | | |
| Q.18 | A machine prints 540 pages in 6 hours. a) How many pages will it print in 10 hours? b) If the machine needs to print 1,800 pages, how many hours will it take? | | | | | | | |
| Q.19 | If 36 books are packed in 2 cartons of the same size, how many such cartons will be required to pack 144 books? | | | | | | | |

Case Study: A school is planning a picnic for students. The teachers decided to book buses for transportation. Each bus has the same seating capacity. The following data was collected:

| | | | | | |
|---------------------------|-----------|------------|------------|------------|-----------|
| Number of Students | 60 | 120 | 180 | 240 | ? |
| Number of Buses | 2 | 4 | 6 | ? | 10 |



Q.20

Based on the given information, answer the following questions:

- How many students can be accommodated in 1 bus?
- If 240 students are going, how many buses will be required?
- If the school hires 10 buses, how many students can go on the picnic?
- Is the number of students directly proportional to the number of buses? If so, find the constant of variation.

ANSWERS

| | | | | |
|-------------|------------------------|-------------------------------------|-----------------------------------|--|
| Q1. B | Q2. C | Q3. C | Q4. D | Q5. C |
| Q6. A | Q7. B | Q8. A | Q9. D | Q10. A |
| Q11. 5 pots | Q12. a)900 b) 24 kg | Q13. a=13 b=84 c=148 | Q14. a)20 km b) 200 minutes | Q15. ₹140 |
| Q16. 21m | Q17. 50 litre | Q18. a) 900 pages b) 20 hours | Q19. 8 cartons | Q20 a) 30 students b) 8 buses c) 300 students d) Yes, 30 |