INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet For The Academic Year 2026-27

CLASS: VIII SUBJECT: Mathematics DATE: 04/11/2026

LESSON-7 Proportional Reasoning – 1

1. Write the ratio of 45 to 60 in its simplest form.

2. Check whether the ratios 8 : 12 and 20 : 30 are proportional.

3. Find the missing number: 15:25::27:x

4. Give three ratios proportional to 5 : 8.

5. A mixture contains red and blue paint in the ratio 4 : 7. If there are 28 litres of blue paint, find the quantity of red paint.

6. Reduce the ratio 84 : 126 to its simplest form.

7. A car travels 120 km in 2 hours at a constant speed. How far will it travel in 5 hours?

8. Divide 48 in the ratio 5 : 3.

9. The length and breadth of a rectangular photograph are 72 cm and 48 cm respectively.

(a) Find the ratio of its length to breadth in simplest form.

(b) Another photograph has a length of 108 cm and breadth of 72 cm. Are the two photographs similar? Give reasons.

10. A shopkeeper uses 12 kg of sugar to prepare 30 kg of sweets. How much sugar will he need to prepare 75 kg of sweets, maintaining the same proportion?

11. A mason requires 1,200 bricks to construct a wall of length 8 metres. How many bricks will be required to construct a wall of length 18 metres, assuming the height and thickness remain the same?

12. Two friends invested ₹60,000 and ₹90,000 respectively in a business. At the end of the year, they earned a profit of ₹30,000. If the profit is shared in the ratio of their investments, find each person's share.

13. In a laboratory, milk and water are mixed in the ratio 5 : 3. If the total quantity of the mixture is 64 litres, find: (a) The quantity of milk (b) The quantity of water.

(c) If 8 litres water is added to the mixture, find the new ratio .

14. A mixture of 60 kg contains sand and cement in the ratio 7 : 3. How much additional cement should be added to make the ratio of sand to cement 7 : 5?

15. A train travels 240 km in 4 hours at a constant speed.

(a) Find the distance travelled in 7 hours.

(b) How much time will it take to travel 450 km at the same speed?

16. A shopkeeper sells 250 g of tea for ₹175, while another shopkeeper sells 1 kg of the same quality of tea for ₹640.

(a) Are the weight-to-price ratios proportional?

(b) Which shopkeeper offers the cheaper tea?

17. Last year, 4 buses were required to transport 216 students on a school trip. This year, 297 students are going on the trip.

(a) Find the capacity of each bus.

(b) How many buses will be required this year?

(c) How many vacant seats will there be?

18. The present ages of a mother and her daughter are in the ratio 7 : 2. If the sum of their ages is 45 years, find their present ages. Also find their age ratio after 5 years.

19. The Earth travels approximately 936 million kilometres around the Sun in one year. Calculate the approximate distance travelled in:

(a) One month (consider 12 months in a year).

(b) One week (consider 52 weeks in a year).

20. A farmer applies 12 tonnes of manure for every acre of agricultural land. He owns a rectangular field measuring 300 feet by 484 feet. Find the quantity of manure required.

21. A bucket of orange paint is prepared by mixing red and yellow paint in the ratio 2 : 3. Another bucket of yellow paint is added to the mixture. Find the new ratio of red paint to yellow paint.

22. The population of City A is 24 million and its area is 1,200 square kilometres. The population of City B is 18 million and its area is 600 square kilometres.

(a) Calculate the population density of both cities.

(b) Which city is more crowded?

(c) Find the difference in their population densities.

ANSWERS

1) 3 : 4 3) 45 4) 10 : 16 , 15 : 24 , 20 : 32 5) Red paint = 16 litres

6) 2:3 7) Distance = 300 km 8) 30 and 18 9) a) 3 : 2 b) Yes

10) Required sugar = 30 kg

11) Required bricks = 2,700

12) Ratio of investments: 60000:90000=2:3

Total parts = 2 + 3 = 5

Answer: ₹12,000 and ₹18,000

13) a) 40 litres of milk b) 24 litres of water c) 5 : 4

14) Quantity of sand =42 kg

Quantity of cement =18 kg

The new ratio is 7 : 5 ,

So 7:5::42:x and hence x=30 kg

Additional cement required = 30-18=12 kg

15) (a) Distance = 420 km b) 7 hours 30 minutes

16) The ratios are not proportional. The second shopkeeper offers cheaper tea by ₹60 per kg

17) (a) Capacity of each bus = 54 (b) Number of buses required = 5.5

Therefore, 6 buses are required.

(c) Total seats = 6 x 54 = 324

Vacant seats = 324-297=27

18) Mother's age =35 yrs , Daughter's age = 10 yrs

After 5 years: Mother = 40 years , Daughter = 15 years

New ratio is 40:15=8:3

19) 78 million km in one month and 18 million km in one week.

20) 40 tonnes of manure.

21) New ratio is 2:8 = 1 : 4.

22) Population density(per sq.km) = 20000 for City A & 30000 for City B

(b) City B is more crowded because it has a higher population density.

(c) Difference = 30000-20000=10000