Ratio and Proportion

TEST

Time – 1 hour **Maximum Marks - 20**

Important Instructions

- This test contains 20 questions.
- Each question has FOUR options (1), (2), (3) and (4). ONLY ONE of these four options is correct.
- For each question, marks will be awarded in one of the following categories.
  Full Mark: +1 : If only correct answer is given.
  Zero Mark: 0 : If no answer is given.
  Negative Marks : There is no negative marking.

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1. In the word 'Geometry', what is the ratio of number of consonants to the number of vowels?

(1) 4 : 7 (2) 5 : 3 (3) 5 : 6 (4) 6 : 5

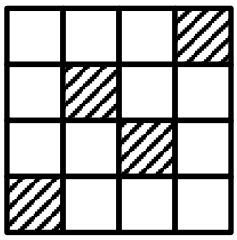
2. For the ratio to be meaningful, the terms should have

(1) same units (2) same value (3) same factors (4) different units

3. There are 180 students in a class out of which there are 75 girls. The ratio of boys to the total number of students is

(1) 12 : 7 (2) 5 : 12 (3) 7 : 12 (4) 5 : 7

4. In given figure find ratio of shaded region to unshaded region.



(1) 1 : 4 (2) 1 : 12 (3) 3 : 7 (4) 1 : 3

5. Amit deposited ₹ 2050 in a Bank in month of January, He withdrew ₹ 410 from his account on the last date of the month. Find the ratio of money withdrawn to the total money deposited.

(1) 5 : 1 (2) 1 : 4 (3) 1 : 5 (4) 1 : 6

6. Give the equivalent ratios of 3 : 5

(1) $\frac{9}{15},\frac{6}{10}$ (2) $\frac{9}{10},\frac{6}{13}$ (3) $\frac{9}{11},\frac{6}{7}$ (4) $\frac{9}{15},\frac{6}{12}$

7. The sides of a triangle are in the ratio 2 : 3 : 4. If the perimeter is 72 cm. Find its sides in cm.

(1) 16, 24, 32 (2) 8, 12, 16 (3) 14, 21, 28 (4) 6, 9, 12

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8. Divide 40 chocolates between Vrinda and Tushika in the ratio of 3 : 2.

(1) 20, 24 (2) 24, 16 (3) 26, 14 (4) 22, 18

9. A rectangular sheet is of length 2.4 m and breadth 80 cm. Find the ratio of its width to its perimeter.

(1) 1 : 8 (2) 1 : 16 (3) 1 : 32 (4) 1 : 4

10. Which of the following is not Equivalent to 3 : 7 ?

(1) 12 : 28 (2) 18 : 42 (3) 30 : 70 (4) 36 : 72

11. The ratio of the number of sides of a square to the number of edges of a cube is

(1) 1 : 2 (2) 1 : 3 (3) 3 : 1 (4) 4 : 1

12. The weight of 25 copies is 5kg. Find the weight of 30 such copies?

(1) 5 kg (2) 6 kg (3) 4 kg (4) 5.5 kg

13. Which of the following are in proportion?

(a) 8, 16, 6, 12 (b) 6, 2, 4, 3 (c) 150, 250, 200, 300

(1) (a), (b), (c) (2) (a) (3) (b), (c) (4) (a), (c)

14. If 4, x, 9 are in continued proportion, find value of x.

(1) 4 (2) 5 (3) 6 (4) 7

15. The ratio of the sale of Eggs on a Sunday to that of the whole week of a grocery shop was 2 : 9. If the total sale of Eggs in the same week was ₹ 360, find the sale (in ₹) of Eggs on Sunday.

(1) 84 (2) 90 (3) 80 (4) 70

16. A train runs 200 kilometers in 5 hours. How many kilometers does it run is 7 hours?

(1) 240 km (2) 280 km (3) 260 km (4) 210 km

17. A man can work 8 hours daily and finishes a work in 12 days. If he works 6 hours daily, in how many days will the same work be finished?

(1) 12 days (2) 16 days (3) 14 days (4) 15 days

18. A family of 4 members consumes 6 kg of sugar in a month. What will be the monthly consumption of sugar, if the number of family members becomes 6?

(1) 7 kg (2) 9 kg (3) 8 kg (4) 10 kg

19. The price of 3 meters of cloth is ₹ 79.50. Find the price of 15 meters of such cloth.

(1) ₹ 390.5 (2) ₹ 380.5 (3) ₹ 397.5 (4) ₹ 400

20. An office opens at 9 am and closes at 5 pm with a lunch interval of 30 minutes. What is the ratio of lunch interval to the total period in office?

(1) 1 : 32 (2) 1 : 16 (3) 1 : 18 (4) 1 : 20

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Test Solutions

Answer Key

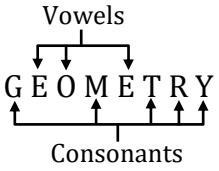
Question	1	2	3	4	5	6	7	8	9	10
Answer	**2**	**1**	**3**	**4**	**3**	**1**	**1**	**2**	**1**	**4**
Question	11	12	13	14	15	16	17	18	19	20
Answer	**2**	**2**	**2**	**3**	**3**	**2**	**2**	**2**	**3**	**2**

1. Option (2)

Number of consonants = 5

Number of Vowels = 3

Required ratio = 5 : 3



2. Option (1)

For the ratio to be meaningful, the terms should have same units.

3. Option (3)

Total number of students = 180

Number of girls = 75

Number of boys = 180 – 75 = 105

Boys : Students = 105 : 180

$= \frac{105}{180} = \frac{21}{36} = \frac{7}{12}$

= 7 : 12

4. Option (4)

Total square = 4 × 4 = 16

Shaded region = 4

Unshaded region = 12

Required ratio = 4 : 12

= 1 : 3

5. Option (3)

Money withdrawn = ₹ 410

Money deposited = ₹ 2050

$\frac{\text{Money withdrawn}}{\text{Money deposited}} = \frac{410}{2050} = \frac{1}{5}$

Required ratio = 1 : 5

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6. Option (1)

Equivalent ratios of 3 : 5

$\frac{3}{5}\times\frac{3}{3}=\frac{9}{15}$

$\frac{3}{5}\times\frac{2}{2}=\frac{6}{10}$

$\Rightarrow \frac{9}{15},\frac{6}{10}$

7. Option (1)

Let sides be 2x, 3x, 4x

So, perimeter = 2x + 3x + 4x

72 cm = 9x

x = 8 cm

Sides 2x = 2(8) = 16 cm

3x = 3(8) = 24 cm

4x = 4(8) = 32 cm

8. Option (2)

Let Vrinda get 3x chocolates and Tushika get 2x chocolates.

A.T.P. 3x + 2x = 40

5x = 40

$x = \frac{40}{5} = 8$

Vrinda gets = 3(8) = 24

Tushika gets = 2(8) = 16

9. Option (1)

Length of sheet = 2.4 × 100 cm

$= \frac{24}{10}\times 100 = 240$ cm

Breadth of sheet = 80 cm

$\frac{\text{width}}{\text{Perimeter}}=\frac{80}{2(L+B)}=\frac{80}{2(240+80)}$

$= \frac{80}{2(320)}=\frac{80}{640}=\frac{8}{64}=\frac{1}{8}$

Required ratio = 1 : 8

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10. Option (4)

3 : 7

$\frac{12}{28}=\frac{3}{7};\frac{18}{42}=\frac{3}{7};\frac{30}{70}=\frac{3}{7}$

$\frac{36}{72}=\frac{1}{2}$

11. Option (2)

Number of sides of square = 4

Number of edges of cube = 12

Required ratio = $\frac{4}{12}=\frac{1}{3}$

= 1 : 3

12. Option (2)

Let weight of 30 copies = x

$\frac{25}{5}=\frac{30}{x}$

$x=\frac{5\times30}{25}$ = 6 kg

13. Option (2)

(a) $\frac{8}{16}=\frac{6}{12}\Rightarrow\frac{1}{2}=\frac{1}{2}$

(b) $\frac{6}{2}\neq\frac{4}{3}$

(c) $\frac{150}{250}\neq\frac{200}{300}$

$\frac{3}{5}\neq\frac{2}{3}$

14. Option (3)

$\frac{4}{x}=\frac{x}{9}$

$x^2=9\times4$

$x=3\times2$ = 6

x = 6

15. Option (3)

$\frac{2}{9}=\frac{\text{Sale of Eggs on Sunday}}{\text{Total week sale}}$

$\frac{2}{9}=\frac{x}{360}$

$x=\frac{360\times2}{9}$ = ₹ 80

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16. Option (2)

$$\frac{200\,\text{km}}{5\,\text{hrs}} = \frac{x\,\text{km}}{7\,\text{hrs}}$$

$$x = \frac{200 \times 7}{5} = 280 \text{ km}$$

17. Option (2)

$8 \times 12 = 6 \times x$

$$x = \frac{8 \times 12}{6} = 16 \text{ days}$$

18. Option (2)

$$\frac{4\,\text{members}}{6\,\text{members}} = \frac{6\,\text{kg}}{x\,\text{kg}}$$

$$x = \frac{6 \times 6}{4} = 9 \text{ kg}$$

19. Option (3)

$$\frac{3}{79.5} = \frac{15}{x}$$

$$x = \frac{15}{3} \times 79.5$$

$$x = 5 \times 79.5$$

$x = ₹\ 397.5$

20. Option (2)

Lunch time = 30 minutes

Office time = (8 × 60) min = 480 min

$$\frac{\text{Lunch time}}{\text{Office time}} = \frac{30}{480} = \frac{1}{16}$$

= 1 : 16

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