

Today's Learning – Day 2

Mathematics | Topic: Ratio & Proportion

1 ■■■ Clear Theory (Easy Language)

Ratio shows comparison between two quantities of the same type. Proportion means equality of two ratios. This topic is very important for Railway exams and used in Time & Work, Speed & Distance and Age problems.

2 ■■■ Important Formulas / Rules

$$a:b = a/b$$

$$a:b = c:d \Rightarrow ad = bc$$

$$\text{If } a:b = m:n \Rightarrow a=mk, b=nk$$

$$\text{If } x:y = y:z \Rightarrow y^2 = xz$$

■ Quick Tricks

Simplify ratio

Convert units before solving

Add ratio parts for division problems

■ 30 MCQs with Answers & Explanations

Q1. Simplify 20:30

Answer: 2:3

Explanation: Divide by 10

Q2. Ratio equal to 3:5

Answer: 6:10

Explanation: Multiply by 2

Q3. a:b=4:7, a=20

Answer: 35

Explanation: k=5

Q4. Divide 600 in ratio 2:3

Answer: 240,360

Explanation: Parts=5

Q5. x:y=5:8, x/y

Answer: 5/8

Explanation: Direct

Q6. 0.5:2.5

Answer: 1:5

Explanation: Multiply by 10

Q7. a:b=7:9, (a+b):b

Answer: 16:9

Explanation: Add ratios

Q8. 4:5=20:x

Answer: 25

Explanation: Cross multiply

Q9. Age ratio 3:4, A=18

Answer: 24

Explanation: Multiply

Q10. Divide 450 in ratio 4:5

Answer: 180,270

Explanation: Parts=9

Q11. 25%:50%

Answer: 1:2

Explanation: Convert

Q12. a:b=6:7, 3a:2b

Answer: 9:14

Explanation: Multiply

Q13. Boys:girls=5:4, total=360

Answer: 160

Explanation: 4/9×360

Q14. x:y=y:z then

Answer: $y^2=xz$

Explanation: Property

Q15. 3/4 : 5/6

Answer: 9:10

Explanation: Cross

Q16. 1 hour : 30 min

Answer: 2:1

Explanation: Convert

Q17. 2:3=8:x

Answer: 12

Explanation: Cross

Q18. 50:2

Answer: 25:1

Explanation: Divide

Q19. Divide 1000 in 7:3

Answer: 700,300

Explanation: Parts=10

Q20. a:b=4:9, b:c=6:5

Answer: 8:18:15

Explanation: LCM

Q21. 15:20

Answer: 3:4

Explanation: Simplify

Q22. 2kg:500g

Answer: 4:1

Explanation: Units

Q23. 30 of 120

Answer: 1:4

Explanation: 30/120

Q24. A:B=5:6 sum=44

Answer: 20,24

Explanation: Parts=11

Q25. x:y=3:5 sum=40

Answer: 15,25

Explanation: k=5

Q26. 8:12

Answer: 2:3

Explanation: Divide

Q27. 40min:2hr

Answer: 1:3

Explanation: Convert

Q28. A:B=7:3, B:C=5:2

Answer: 35:15:6

Explanation: LCM

Q29. 120 in 5:7

Answer: 50,70

Explanation: Parts=12

Q30. 2/3 : 4/5

Answer: 5:6

Explanation: Cross

