



**THE MATH HUB**

themathhub.pk

# Ratio & Proportion MCQs

**100 FULLY SOLVED MCQs**

PPSC, FPSC & ONE PAPER EXAMS

NTS • CSS MPT • PMS • Government Job Tests

**Fast Methods • Four Options • Immediate Mathematical Solution**

Prepared by

**MEHREEN KANWAL**

MPhil Mathematics

**RANA ALI HASAN**

MPhil Mathematics

The Math Hub - themathhub.pk | 0301-4058484

The Science Academy - Chak No. 84 NB



**PART 2 - RATIO & PROPORTION | 100 SOLVED MCQs****Fast Ratio and Proportion Foundation****Ratio reduction**

$$a : b = \frac{a}{b}$$

$$a : b = (a \div g) : (b \div g), \quad g = \gcd(a, b)$$

**Proportion**

$$a : b = c : d$$

$$\frac{a}{b} = \frac{c}{d}$$

$$ad = bc$$

**Direct / inverse speed route**

$$\frac{x_1}{y_1} = \frac{x_2}{y_2} \quad (\text{direct})$$

$$x_1 y_1 = x_2 y_2 \quad (\text{inverse})$$

**Share from total**

$$A : B = m : n$$

$$A = \frac{m}{m+n}T, \quad B = \frac{n}{m+n}T$$

**MCQ 1**

If 5 litres of paint cover  $50 m^2$ , how much area can 10 litres cover?

- A. 100                                      B. 115  
C. 118                                      D. None of these

FPSC Official Practice Paper - General Abilities

**Solution**

$$\begin{aligned} 5 \text{ L} &\longrightarrow 50 m^2 \\ 1 \text{ L} &\longrightarrow \frac{50}{5} = 10 m^2 \\ 10 \text{ L} &\longrightarrow 10 \times 10 = 100 m^2 \end{aligned}$$

**Final Answer**  $100 m^2$  — Option A

**MCQ 2**

Three dozen eggs cost Rs. 720. What is the cost of 5 eggs?

- A. Rs. 100                                      B. Rs. 150  
C. Rs. 90                                      D. Rs. 120

FPSC Official Practice Paper - General Abilities

**Solution**

$$\begin{aligned} 3 \text{ dozen} &= 3 \times 12 = 36 \text{ eggs} \\ 36 \text{ eggs} &\longrightarrow 720 \\ 1 \text{ egg} &\longrightarrow \frac{720}{36} = 20 \\ 5 \text{ eggs} &\longrightarrow 5 \times 20 = 100 \end{aligned}$$

**Final Answer** Rs. 100 — Option A

**MCQ 3**

Simplify the ratio 24 : 36.

- A. 3:2                                      B. 3:3  
C. 2:3                                      D. 2:4

**Solution**

$$\begin{aligned} 24 : 36 \\ = (24 \div 12) : (36 \div 12) \\ = 2 : 3 \end{aligned}$$

**Final Answer**  $2 : 3$  — Option C

**MCQ 4**

Simplify the ratio 45 : 60.

- A. 4:3                                      B. 4:4  
C. 3:5                                      D. 3:4

**Solution**

$$\begin{aligned} 45 : 60 \\ = (45 \div 15) : (60 \div 15) \\ = 3 : 4 \end{aligned}$$

**Final Answer**  $3 : 4$  — Option D

**MCQ 5**

Simplify the ratio 84 : 126.

- A. 3:2                                      B. 3:3  
C. 2:3                                      D. 2:4

**Solution**

$$\begin{aligned} 84 : 126 \\ = (84 \div 42) : (126 \div 42) \\ = 2 : 3 \end{aligned}$$

**Final Answer**  $2 : 3$  — Option C

**MCQ 6**

Simplify the ratio 150 : 225.

- A. 3:2                                      B. 3:3  
C. 2:3                                      D. 2:4

**Solution**

$$\begin{aligned} 150 : 225 \\ = (150 \div 75) : (225 \div 75) \\ = 2 : 3 \end{aligned}$$

**Final Answer**  $2 : 3$  — Option C

**MCQ 7**

Simplify the ratio 72 : 96.

- A. 4:3                      B. 4:4  
C. 3:4                      D. 3:5

**Solution**

$$\begin{aligned} &72 : 96 \\ &= (72 \div 24) : (96 \div 24) \\ &= 3 : 4 \end{aligned}$$

**Final Answer****3 : 4** — Option C**MCQ 8**

Simplify the ratio 125 : 175.

- A. 7:5                      B. 5:7  
C. 6:7                      D. 5:8

**Solution**

$$\begin{aligned} &125 : 175 \\ &= (125 \div 25) : (175 \div 25) \\ &= 5 : 7 \end{aligned}$$

**Final Answer****5 : 7** — Option B**MCQ 9**

Simplify the ratio 144 : 216.

- A. 3:2                      B. 3:3  
C. 2:3                      D. 2:4

**Solution**

$$\begin{aligned} &144 : 216 \\ &= (144 \div 72) : (216 \div 72) \\ &= 2 : 3 \end{aligned}$$

**Final Answer****2 : 3** — Option C**MCQ 10**

Simplify the ratio 56 : 98.

- A. 7:4                      B. 4:7  
C. 5:7                      D. 4:8

**Solution**

$$\begin{aligned} &56 : 98 \\ &= (56 \div 14) : (98 \div 14) \\ &= 4 : 7 \end{aligned}$$

**Final Answer****4 : 7** — Option B**MCQ 11**

Simplify the ratio 320 : 480.

- A. 2:3                      B. 3:2  
C. 3:3                      D. 2:4

**Solution**

$$\begin{aligned} &320 : 480 \\ &= (320 \div 160) : (480 \div 160) \\ &= 2 : 3 \end{aligned}$$

**Final Answer****2 : 3** — Option A**MCQ 12**

Simplify the ratio 18 : 42.

- A. 7:3                      B. 4:7  
C. 3:7                      D. 3:8

**Solution**

$$\begin{aligned} &18 : 42 \\ &= (18 \div 6) : (42 \div 6) \\ &= 3 : 7 \end{aligned}$$

**Final Answer****3 : 7** — Option C

**MCQ 13**

Simplify the ratio 105 : 140.

- A. 4:3                      B. 3:4  
C. 4:4                      D. 3:5

**Solution**

$$\begin{aligned} 105 : 140 \\ = (105 \div 35) : (140 \div 35) \\ = 3 : 4 \end{aligned}$$

**Final Answer****3 : 4** — Option B**MCQ 14**

Simplify the ratio 96 : 160.

- A. 5:3                      B. 4:5  
C. 3:5                      D. 3:6

**Solution**

$$\begin{aligned} 96 : 160 \\ = (96 \div 32) : (160 \div 32) \\ = 3 : 5 \end{aligned}$$

**Final Answer****3 : 5** — Option C**MCQ 15**

Find the ratio of 3m to 75cm in simplest form.

- A. 1:4                      B. 5:1  
C. 4:2                      D. 4:1

**Solution**

$$\begin{aligned} \text{Convert to same unit: } 3m &= 300 \\ 75cm &= 75 \\ 300 : 75 &= (300 \div 75) : (75 \div 75) = 4 : 1 \end{aligned}$$

**Final Answer****4 : 1** — Option D**MCQ 16**

Find the ratio of 2kg to 500g in simplest form.

- A. 1:4                      B. 5:1  
C. 4:2                      D. 4:1

**Solution**

$$\begin{aligned} \text{Convert to same unit: } 2kg &= 2000 \\ 500g &= 500 \\ 2000 : 500 &= (2000 \div 500) : (500 \div 500) = 4 : 1 \end{aligned}$$

**Final Answer****4 : 1** — Option D**MCQ 17**

Find the ratio of 90min to 3h in simplest form.

- A. 2:1                      B. 2:2  
C. 1:2                      D. 1:3

**Solution**

$$\begin{aligned} \text{Convert to same unit: } 90min &= 90 \\ 3h &= 180 \\ 90 : 180 &= (90 \div 90) : (180 \div 90) = 1 : 2 \end{aligned}$$

**Final Answer****1 : 2** — Option C**MCQ 18**

Find the ratio of 250mL to 2L in simplest form.

- A. 8:1                      B. 2:8  
C. 1:8                      D. 1:9

**Solution**

$$\begin{aligned} \text{Convert to same unit: } 250mL &= 250 \\ 2L &= 2000 \\ 250 : 2000 &= (250 \div 250) : (2000 \div 250) = 1 : 8 \end{aligned}$$

**Final Answer****1 : 8** — Option C

**MCQ 19**

Find the ratio of 5dozen to 30items in simplest form.

- A. 1:2                      B. 3:1  
C. 2:2                      D. 2:1

**Solution**

Convert to same unit: 5dozen = 60

$$30\text{items} = 30$$

$$60 : 30 = (60 \div 30) : (30 \div 30) = 2 : 1$$

**Final Answer****2 : 1** — Option D**MCQ 20**

Find the ratio of 1.5kg to 750g in simplest form.

- A. 1:2                      B. 3:1  
C. 2:2                      D. 2:1

**Solution**

Convert to same unit: 1.5kg = 1500

$$750\text{g} = 750$$

$$1500 : 750 = (1500 \div 750) : (750 \div 750) = 2 : 1$$

**Final Answer****2 : 1** — Option D**MCQ 21**

Find the ratio of 45sec to 3min in simplest form.

- A. 4:1                      B. 2:4  
C. 1:4                      D. 1:5

**Solution**

Convert to same unit: 45sec = 45

$$3\text{min} = 180$$

$$45 : 180 = (45 \div 45) : (180 \div 45) = 1 : 4$$

**Final Answer****1 : 4** — Option C**MCQ 22**

Find the ratio of 2.5m to 125cm in simplest form.

- A. 1:2                      B. 3:1  
C. 2:2                      D. 2:1

**Solution**

Convert to same unit: 2.5m = 250

$$125\text{cm} = 125$$

$$250 : 125 = (250 \div 125) : (125 \div 125) = 2 : 1$$

**Final Answer****2 : 1** — Option D**MCQ 23**

Divide 360 in the ratio 2 : 3. Find the larger share.

- A. 144                      B. 216  
C. 288                      D. 220

**Solution**

Total parts = 2 + 3 = 5

$$1 \text{ part} = \frac{360}{5} = 72$$

$$\text{Larger share} = 3 \times 72 = 216$$

**Final Answer****216** — Option B**MCQ 24**

Divide 840 in the ratio 3 : 4. Find the larger share.

- A. 360                      B. 480  
C. 600                      D. 484

**Solution**

Total parts = 3 + 4 = 7

$$1 \text{ part} = \frac{840}{7} = 120$$

$$\text{Larger share} = 4 \times 120 = 480$$

**Final Answer****480** — Option B

**MCQ 25**

Divide 1200 in the ratio 5 : 7. Find the larger share.

- A. 700                      B. 500  
C. 800                      D. 600

**Solution**

$$\text{Total parts} = 5 + 7 = 12$$

$$1 \text{ part} = \frac{1200}{12} = 100$$

$$\text{Larger share} = 7 \times 100 = 700$$

**Final Answer****700** — Option A**MCQ 26**

Divide 450 in the ratio 4 : 5. Find the larger share.

- A. 200                      B. 300  
C. 254                      D. 250

**Solution**

$$\text{Total parts} = 4 + 5 = 9$$

$$1 \text{ part} = \frac{450}{9} = 50$$

$$\text{Larger share} = 5 \times 50 = 250$$

**Final Answer****250** — Option D**MCQ 27**

Divide 990 in the ratio 2 : 3. Find the larger share.

- A. 396                      B. 792  
C. 594                      D. 598

**Solution**

$$\text{Total parts} = 2 + 3 = 5$$

$$1 \text{ part} = \frac{990}{5} = 198$$

$$\text{Larger share} = 3 \times 198 = 594$$

**Final Answer****594** — Option C**MCQ 28**

Divide 1400 in the ratio 3 : 4. Find the larger share.

- A. 800                      B. 600  
C. 1,000                      D. 804

**Solution**

$$\text{Total parts} = 3 + 4 = 7$$

$$1 \text{ part} = \frac{1400}{7} = 200$$

$$\text{Larger share} = 4 \times 200 = 800$$

**Final Answer****800** — Option A**MCQ 29**

Divide 720 in the ratio 5 : 7. Find the larger share.

- A. 300                      B. 480  
C. 420                      D. 360

**Solution**

$$\text{Total parts} = 5 + 7 = 12$$

$$1 \text{ part} = \frac{720}{12} = 60$$

$$\text{Larger share} = 7 \times 60 = 420$$

**Final Answer****420** — Option C**MCQ 30**

Divide 1080 in the ratio 4 : 5. Find the larger share.

- A. 600                      B. 480  
C. 720                      D. 604

**Solution**

$$\text{Total parts} = 4 + 5 = 9$$

$$1 \text{ part} = \frac{1080}{9} = 120$$

$$\text{Larger share} = 5 \times 120 = 600$$

**Final Answer****600** — Option A

**MCQ 31**

Divide 600 in the ratio 1 : 2. Find the larger share.

- A. 400                      B. 200  
C. 600                      D. 404

**Solution**

$$\text{Total parts} = 1 + 2 = 3$$

$$1 \text{ part} = \frac{600}{3} = 200$$

$$\text{Larger share} = 2 \times 200 = 400$$

**Final Answer**

400 — Option A

**MCQ 32**

Divide 2100 in the ratio 2 : 5. Find the larger share.

- A. 1,500                      B. 600  
C. 1,800                      D. 1,200

**Solution**

$$\text{Total parts} = 2 + 5 = 7$$

$$1 \text{ part} = \frac{2100}{7} = 300$$

$$\text{Larger share} = 5 \times 300 = 1,500$$

**Final Answer**

1,500 — Option A

**MCQ 33**

Divide 960 in the ratio 3 : 5. Find the larger share.

- A. 360                      B. 720  
C. 480                      D. 600

**Solution**

$$\text{Total parts} = 3 + 5 = 8$$

$$1 \text{ part} = \frac{960}{8} = 120$$

$$\text{Larger share} = 5 \times 120 = 600$$

**Final Answer**

600 — Option D

**MCQ 34**

Divide 1760 in the ratio 5 : 6. Find the larger share.

- A. 800                      B. 1,120  
C. 964                      D. 960

**Solution**

$$\text{Total parts} = 5 + 6 = 11$$

$$1 \text{ part} = \frac{1760}{11} = 160$$

$$\text{Larger share} = 6 \times 160 = 960$$

**Final Answer**

960 — Option D

**MCQ 35**

Two numbers are in the ratio 3 : 5 and their sum is 64. Find the larger number.

- A. 40                      B. 48  
C. 32                      D. 44

**Solution**

$$\text{Total parts} = 3 + 5 = 8$$

$$1 \text{ part} = \frac{64}{8} = 8$$

$$\text{Larger} = 5 \times 8 = 40$$

**Final Answer**

40 — Option A

**MCQ 36**

Two numbers are in the ratio 2 : 7 and their sum is 81. Find the larger number.

- A. 72                      B. 54  
C. 67                      D. 63

**Solution**

$$\text{Total parts} = 2 + 7 = 9$$

$$1 \text{ part} = \frac{81}{9} = 9$$

$$\text{Larger} = 7 \times 9 = 63$$

**Final Answer**

63 — Option D

**MCQ 37**

Two numbers are in the ratio 4 : 9 and their sum is 130. Find the larger number.

- A. 100                      B. 90  
C. 80                      D. 94

**Solution**

$$\text{Total parts} = 4 + 9 = 13$$

$$1 \text{ part} = \frac{130}{13} = 10$$

$$\text{Larger} = 9 \times 10 = 90$$

**Final Answer**

90 — Option B

**MCQ 38**

Two numbers are in the ratio 5 : 8 and their sum is 156. Find the larger number.

- A. 108                      B. 96  
C. 84                      D. 100

**Solution**

$$\text{Total parts} = 5 + 8 = 13$$

$$1 \text{ part} = \frac{156}{13} = 12$$

$$\text{Larger} = 8 \times 12 = 96$$

**Final Answer**

96 — Option B

**MCQ 39**

Two numbers are in the ratio 4 : 7 and their sum is 143. Find the larger number.

- A. 104                      B. 78  
C. 95                      D. 91

**Solution**

$$\text{Total parts} = 4 + 7 = 11$$

$$1 \text{ part} = \frac{143}{11} = 13$$

$$\text{Larger} = 7 \times 13 = 91$$

**Final Answer**

91 — Option D

**MCQ 40**

Two numbers are in the ratio 3 : 4 and their difference is 21. Find their sum.

- A. 168                      B. 126  
C. 147                      D. 84

**Solution**

$$\text{Difference in parts} = 4 - 3 = 1$$

$$1 \text{ part} = \frac{21}{1} = 21$$

$$\text{Sum} = (3 + 4) \times 21 = 147$$

**Final Answer**

147 — Option C

**MCQ 41**

Two numbers are in the ratio 2 : 5 and their difference is 36. Find their sum.

- A. 84                      B. 96  
C. 72                      D. 60

**Solution**

$$\text{Difference in parts} = 5 - 2 = 3$$

$$1 \text{ part} = \frac{36}{3} = 12$$

$$\text{Sum} = (2 + 5) \times 12 = 84$$

**Final Answer**

84 — Option A

**MCQ 42**

Two numbers are in the ratio 5 : 7 and their difference is 24. Find their sum.

- A. 156                      B. 144  
C. 132                      D. 84

**Solution**

$$\text{Difference in parts} = 7 - 5 = 2$$

$$1 \text{ part} = \frac{24}{2} = 12$$

$$\text{Sum} = (5 + 7) \times 12 = 144$$

**Final Answer**

144 — Option B

**MCQ 43**

Two numbers are in the ratio 7 : 9 and their difference is 18. Find their sum.

- A. 144                      B. 153  
C. 135                      D. 81

**Solution**

Difference in parts =  $9 - 7 = 2$

$$1 \text{ part} = \frac{18}{2} = 9$$

$$\text{Sum} = (7 + 9) \times 9 = 144$$

**Final Answer**

144 — Option A

**MCQ 44**

Two numbers are in the ratio 6 : 11 and their difference is 35. Find their sum.

- A. 126                      B. 112  
C. 119                      D. 77

**Solution**

Difference in parts =  $11 - 6 = 5$

$$1 \text{ part} = \frac{35}{5} = 7$$

$$\text{Sum} = (6 + 11) \times 7 = 119$$

**Final Answer**

119 — Option C

**MCQ 45**

If  $3 : 5 = 21 : x$ , find  $x$ .

- A. 40                      B. 30  
C. 21                      D. 35

**Solution**

$$3 : 5 = 21 : x$$

$$\frac{3}{5} = \frac{21}{x}$$

$$3x = 5 \times 21$$

$$x = \frac{5 \times 21}{3} = 35$$

**Final Answer**

35 — Option D

**MCQ 46**

If  $4 : 7 = 28 : x$ , find  $x$ .

- A. 49                      B. 56  
C. 42                      D. 28

**Solution**

$$4 : 7 = 28 : x$$

$$\frac{4}{7} = \frac{28}{x}$$

$$4x = 7 \times 28$$

$$x = \frac{7 \times 28}{4} = 49$$

**Final Answer**

49 — Option A

**MCQ 47**

If  $5 : 8 = 35 : x$ , find  $x$ .

- A. 64                      B. 48  
C. 56                      D. 35

**Solution**

$$5 : 8 = 35 : x$$

$$\frac{5}{8} = \frac{35}{x}$$

$$5x = 8 \times 35$$

$$x = \frac{8 \times 35}{5} = 56$$

**Final Answer**

56 — Option C

**MCQ 48**

If  $6 : 11 = 42 : x$ , find  $x$ .

- A. 88                      B. 77  
C. 66                      D. 42

**Solution**

$$6 : 11 = 42 : x$$

$$\frac{6}{11} = \frac{42}{x}$$

$$6x = 11 \times 42$$

$$x = \frac{11 \times 42}{6} = 77$$

**Final Answer**

77 — Option B

**MCQ 49**If  $7 : 9 = 56 : x$ , find  $x$ .

- A. 72                      B. 81  
C. 63                      D. 56

**Solution**

$$\begin{aligned} 7 : 9 &= 56 : x \\ \frac{7}{9} &= \frac{56}{x} \\ 7x &= 9 \times 56 \\ x &= \frac{9 \times 56}{7} = 72 \end{aligned}$$

**Final Answer****72** — Option A**MCQ 52**If  $5 : 12 = 30 : x$ , find  $x$ .

- A. 84                      B. 60  
C. 72                      D. 30

**Solution**

$$\begin{aligned} 5 : 12 &= 30 : x \\ \frac{5}{12} &= \frac{30}{x} \\ 5x &= 12 \times 30 \\ x &= \frac{12 \times 30}{5} = 72 \end{aligned}$$

**Final Answer****72** — Option C**MCQ 50**If  $2 : 3 = 18 : x$ , find  $x$ .

- A. 27                      B. 30  
C. 24                      D. 18

**Solution**

$$\begin{aligned} 2 : 3 &= 18 : x \\ \frac{2}{3} &= \frac{18}{x} \\ 2x &= 3 \times 18 \\ x &= \frac{3 \times 18}{2} = 27 \end{aligned}$$

**Final Answer****27** — Option A**MCQ 53**If  $8 : 15 = 40 : x$ , find  $x$ .

- A. 90                      B. 60  
C. 75                      D. 40

**Solution**

$$\begin{aligned} 8 : 15 &= 40 : x \\ \frac{8}{15} &= \frac{40}{x} \\ 8x &= 15 \times 40 \\ x &= \frac{15 \times 40}{8} = 75 \end{aligned}$$

**Final Answer****75** — Option C**MCQ 51**If  $9 : 10 = 72 : x$ , find  $x$ .

- A. 90                      B. 80  
C. 70                      D. 72

**Solution**

$$\begin{aligned} 9 : 10 &= 72 : x \\ \frac{9}{10} &= \frac{72}{x} \\ 9x &= 10 \times 72 \\ x &= \frac{10 \times 72}{9} = 80 \end{aligned}$$

**Final Answer****80** — Option B**MCQ 54**If  $11 : 14 = 55 : x$ , find  $x$ .

- A. 84                      B. 56  
C. 70                      D. 55

**Solution**

$$\begin{aligned} 11 : 14 &= 55 : x \\ \frac{11}{14} &= \frac{55}{x} \\ 11x &= 14 \times 55 \\ x &= \frac{14 \times 55}{11} = 70 \end{aligned}$$

**Final Answer****70** — Option C

**MCQ 55**If  $12 : 17 = 60 : x$ , find  $x$ .

- A. 102                      B. 85  
C. 68                        D. 60

**Solution**

$$\begin{aligned} 12 : 17 &= 60 : x \\ \frac{12}{17} &= \frac{60}{x} \\ 12x &= 17 \times 60 \\ x &= \frac{17 \times 60}{12} = 85 \end{aligned}$$

**Final Answer**

85 — Option B

**MCQ 56**If  $3 : 8 = 27 : x$ , find  $x$ .

- A. 80                        B. 72  
C. 64                        D. 27

**Solution**

$$\begin{aligned} 3 : 8 &= 27 : x \\ \frac{3}{8} &= \frac{27}{x} \\ 3x &= 8 \times 27 \\ x &= \frac{8 \times 27}{3} = 72 \end{aligned}$$

**Final Answer**

72 — Option B

**MCQ 57**If  $7 : 12 = 49 : x$ , find  $x$ .

- A. 84                        B. 96  
C. 72                        D. 49

**Solution**

$$\begin{aligned} 7 : 12 &= 49 : x \\ \frac{7}{12} &= \frac{49}{x} \\ 7x &= 12 \times 49 \\ x &= \frac{12 \times 49}{7} = 84 \end{aligned}$$

**Final Answer**

84 — Option A

**MCQ 58**If  $4 : 9 = 32 : x$ , find  $x$ .

- A. 81                        B. 63  
C. 72                        D. 32

**Solution**

$$\begin{aligned} 4 : 9 &= 32 : x \\ \frac{4}{9} &= \frac{32}{x} \\ 4x &= 9 \times 32 \\ x &= \frac{9 \times 32}{4} = 72 \end{aligned}$$

**Final Answer**

72 — Option C

**MCQ 59**

Find the mean proportional between 4 and 9.

- A. 7                        B. 5  
C. 13                      D. 6

**Solution**

$$\begin{aligned} a : m &= m : b \\ m^2 &= 4 \times 9 = 36 \\ m &= \sqrt{36} = 6 \end{aligned}$$

**Final Answer**

6 — Option D

**MCQ 60**

Find the mean proportional between 9 and 16.

- A. 12                        B. 13  
C. 11                        D. 25

**Solution**

$$\begin{aligned} a : m &= m : b \\ m^2 &= 9 \times 16 = 144 \\ m &= \sqrt{144} = 12 \end{aligned}$$

**Final Answer**

12 — Option A

**MCQ 61**

Find the mean proportional between 16 and 25.

- A. 20                      B. 21  
C. 19                      D. 41

**Solution**

$$a : m = m : b$$

$$m^2 = 16 \times 25 = 400$$

$$m = \sqrt{400} = 20$$

**Final Answer**

20 — Option A

**MCQ 62**

Find the mean proportional between 25 and 36.

- A. 31                      B. 29  
C. 30                      D. 61

**Solution**

$$a : m = m : b$$

$$m^2 = 25 \times 36 = 900$$

$$m = \sqrt{900} = 30$$

**Final Answer**

30 — Option C

**MCQ 63**

Find the fourth proportional to 2, 3, 8.

- A. 14                      B. 10  
C. 8                        D. 12

**Solution**

$$a : b = c : d$$

$$\frac{2}{3} = \frac{8}{d}$$

$$d = \frac{3 \times 8}{2} = 12$$

**Final Answer**

12 — Option D

**MCQ 64**

Find the fourth proportional to 3, 5, 12.

- A. 22                      B. 18  
C. 20                      D. 12

**Solution**

$$a : b = c : d$$

$$\frac{3}{5} = \frac{12}{d}$$

$$d = \frac{5 \times 12}{3} = 20$$

**Final Answer**

20 — Option C

**MCQ 65**

Find the fourth proportional to 4, 7, 20.

- A. 37                      B. 33  
C. 20                      D. 35

**Solution**

$$a : b = c : d$$

$$\frac{4}{7} = \frac{20}{d}$$

$$d = \frac{7 \times 20}{4} = 35$$

**Final Answer**

35 — Option D

**MCQ 66**

Find the fourth proportional to 5, 9, 25.

- A. 45                      B. 47  
C. 43                      D. 25

**Solution**

$$a : b = c : d$$

$$\frac{5}{9} = \frac{25}{d}$$

$$d = \frac{9 \times 25}{5} = 45$$

**Final Answer**

45 — Option A

**MCQ 67**

If 5 books correspond to 750 units, what corresponds to 8 books at the same rate?

- A. 960                      B. 1,200  
C. 1,440                    D. 750

**Solution**

$$\begin{aligned} 5 &\rightarrow 750 \\ 1 &\rightarrow \frac{750}{5} = 150 \\ 8 &\rightarrow 8 \times 150 = 1,200 \end{aligned}$$

**Final Answer**

1,200 — Option B

**MCQ 68**

If 12 metres of cloth correspond to 900 units, what corresponds to 20 metres of cloth at the same rate?

- A. 1,200                      B. 1,800  
C. 900                        D. 1,500

**Solution**

$$\begin{aligned} 12 &\rightarrow 900 \\ 1 &\rightarrow \frac{900}{12} = 75 \\ 20 &\rightarrow 20 \times 75 = 1,500 \end{aligned}$$

**Final Answer**

1,500 — Option D

**MCQ 69**

If 7 kg of rice correspond to 1,260 units, what corresponds to 5 kg of rice at the same rate?

- A. 720                        B. 1,080  
C. 1,260                    D. 900

**Solution**

$$\begin{aligned} 7 &\rightarrow 1,260 \\ 1 &\rightarrow \frac{1,260}{7} = 180 \\ 5 &\rightarrow 5 \times 180 = 900 \end{aligned}$$

**Final Answer**

900 — Option D

**MCQ 70**

If 8 litres of fuel correspond to 96 units, what corresponds to 15 litres of fuel at the same rate?

- A. 144                        B. 180  
C. 216                        D. 96

**Solution**

$$\begin{aligned} 8 &\rightarrow 96 \\ 1 &\rightarrow \frac{96}{8} = 12 \\ 15 &\rightarrow 15 \times 12 = 180 \end{aligned}$$

**Final Answer**

180 — Option B

**MCQ 71**

If 4 machines correspond to 240 units, what corresponds to 7 machines at the same rate?

- A. 420                        B. 336  
C. 504                        D. 240

**Solution**

$$\begin{aligned} 4 &\rightarrow 240 \\ 1 &\rightarrow \frac{240}{4} = 60 \\ 7 &\rightarrow 7 \times 60 = 420 \end{aligned}$$

**Final Answer**

420 — Option A

**MCQ 72**

If 3 hours correspond to 180 units, what corresponds to 5 hours at the same rate?

- A. 240                        B. 360  
C. 180                        D. 300

**Solution**

$$\begin{aligned} 3 &\rightarrow 180 \\ 1 &\rightarrow \frac{180}{3} = 60 \\ 5 &\rightarrow 5 \times 60 = 300 \end{aligned}$$

**Final Answer**

300 — Option D

**MCQ 73**

If 9 shirts correspond to 4,050 units, what corresponds to 6 shirts at the same rate?

- A. 2,160                      B. 3,240  
C. 4,050                      D. 2,700

**Solution**

$$\begin{aligned} 9 &\rightarrow 4,050 \\ 1 &\rightarrow \frac{4,050}{9} = 450 \\ 6 &\rightarrow 6 \times 450 = 2,700 \end{aligned}$$

**Final Answer**

2,700 — Option D

**MCQ 74**

If 25 pages correspond to 40 units, what corresponds to 60 pages at the same rate?

- A. 96                          B. 76.8  
C. 115.2                      D. 40

**Solution**

$$\begin{aligned} 25 &\rightarrow 40 \\ 1 &\rightarrow \frac{40}{25} = 1.6 \\ 60 &\rightarrow 60 \times 1.6 = 96 \end{aligned}$$

**Final Answer**

96 — Option A

**MCQ 75**

If 12 bags correspond to 540 units, what corresponds to 20 bags at the same rate?

- A. 720                          B. 900  
C. 1,080                      D. 540

**Solution**

$$\begin{aligned} 12 &\rightarrow 540 \\ 1 &\rightarrow \frac{540}{12} = 45 \\ 20 &\rightarrow 20 \times 45 = 900 \end{aligned}$$

**Final Answer**

900 — Option B

**MCQ 76**

If 15 notebooks correspond to 900 units, what corresponds to 22 notebooks at the same rate?

- A. 1,320                      B. 1,056  
C. 1,584                      D. 900

**Solution**

$$\begin{aligned} 15 &\rightarrow 900 \\ 1 &\rightarrow \frac{900}{15} = 60 \\ 22 &\rightarrow 22 \times 60 = 1,320 \end{aligned}$$

**Final Answer**

1,320 — Option A

**MCQ 77**

If 6 workers complete a job in 12 days, in how many days will 9 equally efficient workers complete it?

- A. 10                          B. 6  
C. 8                          D. 12

**Solution**

Total work =  $6 \times 12 = 72$  worker-days

$$\begin{aligned} 9 \times d &= 72 \\ d &= \frac{72}{9} = 8 \end{aligned}$$

**Final Answer**

8 days — Option C

**MCQ 78**

If 8 workers complete a job in 15 days, in how many days will 12 equally efficient workers complete it?

- A. 12                          B. 10  
C. 8                          D. 15

**Solution**

Total work =  $8 \times 15 = 120$  worker-days

$$\begin{aligned} 12 \times d &= 120 \\ d &= \frac{120}{12} = 10 \end{aligned}$$

**Final Answer**

10 days — Option B

**MCQ 79**

If 10 workers complete a job in 18 days, in how many days will 15 equally efficient workers complete it?

- A. 14                                      B. 12  
C. 10                                      D. 18

**Solution**

$$\text{Total work} = 10 \times 18 = 180 \text{ worker-days}$$

$$15 \times d = 180$$

$$d = \frac{180}{15} = 12$$

**Final Answer**

12 days — Option B

**MCQ 80**

If 12 workers complete a job in 20 days, in how many days will 16 equally efficient workers complete it?

- A. 17                                      B. 13  
C. 20                                      D. 15

**Solution**

$$\text{Total work} = 12 \times 20 = 240 \text{ worker-days}$$

$$16 \times d = 240$$

$$d = \frac{240}{16} = 15$$

**Final Answer**

15 days — Option D

**MCQ 81**

If 5 workers complete a job in 24 days, in how many days will 8 equally efficient workers complete it?

- A. 15                                      B. 17  
C. 13                                      D. 24

**Solution**

$$\text{Total work} = 5 \times 24 = 120 \text{ worker-days}$$

$$8 \times d = 120$$

$$d = \frac{120}{8} = 15$$

**Final Answer**

15 days — Option A

**MCQ 82**

If 15 workers complete a job in 8 days, in how many days will 10 equally efficient workers complete it?

- A. 14                                      B. 10  
C. 8                                      D. 12

**Solution**

$$\text{Total work} = 15 \times 8 = 120 \text{ worker-days}$$

$$10 \times d = 120$$

$$d = \frac{120}{10} = 12$$

**Final Answer**

12 days — Option D

**MCQ 83**

If 20 workers complete a job in 6 days, in how many days will 12 equally efficient workers complete it?

- A. 12                                      B. 8  
C. 6                                      D. 10

**Solution**

$$\text{Total work} = 20 \times 6 = 120 \text{ worker-days}$$

$$12 \times d = 120$$

$$d = \frac{120}{12} = 10$$

**Final Answer**

10 days — Option D

**MCQ 84**

If 9 workers complete a job in 16 days, in how many days will 18 equally efficient workers complete it?

- A. 8                                      B. 10  
C. 6                                      D. 16

**Solution**

$$\text{Total work} = 9 \times 16 = 144 \text{ worker-days}$$

$$18 \times d = 144$$

$$d = \frac{144}{18} = 8$$

**Final Answer**

8 days — Option A

**MCQ 85**

Two numbers are in the ratio 3 : 4. If 3 is added to each, the ratio becomes 4 : 5. Find the difference between the original numbers.

- A. 2                                      B. 3  
C. 6                                      D. 9

**Solution**

$$\text{Numbers} = 3x, 4x$$

$$\frac{3x+3}{4x+3} = \frac{4}{5}$$

$$15x + 15 = 16x + 12$$

$$x = 3$$

$$\text{Difference} = 4x - 3x = x = 3$$

**Final Answer**

3 — Option B

**MCQ 86**

Two numbers are in the ratio 2 : 5. If 6 is added to each, the ratio becomes 1 : 2. Find the smaller number.

- A. 8                                      B. 10  
C. 12                                    D. 16

**Solution**

$$\text{Numbers} = 2x, 5x$$

$$\frac{2x+6}{5x+6} = \frac{1}{2}$$

$$4x + 12 = 5x + 6$$

$$x = 6$$

$$\text{Smaller} = 2x = 12$$

**Final Answer**

12 — Option C

**MCQ 87**

Two numbers are in the ratio 3 : 7. If 8 is added to each, the ratio becomes 1 : 2. Find the larger number.

- A. 40                                      B. 42  
C. 48                                      D. 56

**Solution**

$$\text{Numbers} = 3x, 7x$$

$$\frac{3x+8}{7x+8} = \frac{1}{2}$$

$$6x + 16 = 7x + 8$$

$$x = 8$$

$$\text{Larger} = 7x = 56$$

**Final Answer**

56 — Option D

**MCQ 88**

Two numbers are in the ratio 5 : 8. If 6 is added to each, the ratio becomes 2 : 3. Find the smaller number.

- A. 20                                      B. 24  
C. 30                                      D. 36

**Solution**

$$\text{Numbers} = 5x, 8x$$

$$\frac{5x+6}{8x+6} = \frac{2}{3}$$

$$15x + 18 = 16x + 12$$

$$x = 6$$

$$\text{Smaller} = 5x = 30$$

**Final Answer**

30 — Option C

**MCQ 89**

Two numbers are in the ratio 4 : 7. If 8 is subtracted from each, the ratio becomes 2 : 5. Find the smaller number.

- A. 12                                      B. 16  
C. 20                                      D. 24

**Solution**

$$\text{Numbers} = 4x, 7x$$

$$\frac{4x - 8}{7x - 8} = \frac{2}{5}$$

$$20x - 40 = 14x - 16$$

$$6x = 24$$

$$x = 4$$

$$\text{Smaller} = 4x = 16$$

**Final Answer**                      16 — Option B

**MCQ 90**

Two numbers are in the ratio 7 : 9. If 6 is added to each, the ratio becomes 4 : 5. Find their sum.

- A. 80                                      B. 84  
C. 96                                      D. 100

**Solution**

$$\text{Numbers} = 7x, 9x$$

$$\frac{7x + 6}{9x + 6} = \frac{4}{5}$$

$$35x + 30 = 36x + 24$$

$$x = 6$$

$$\text{Sum} = 16x = 96$$

**Final Answer**                      96 — Option C

**MCQ 91**

The ages of A and B are in the ratio 3 : 5 and their sum is 64. Find B's age.

- A. 24                                      B. 32  
C. 40                                      D. 48

**Solution**

$$\text{Total parts} = 3 + 5 = 8$$

$$1 \text{ part} = \frac{64}{8} = 8$$

$$B = 5 \times 8 = 40$$

**Final Answer**                      40 years — Option C

**MCQ 92**

Rs. 960 is divided between A and B in the ratio 3 : 5. Find A's share.

- A. Rs. 320                                      B. Rs. 360  
C. Rs. 400                                      D. Rs. 600

**Solution**

$$\text{Total parts} = 3 + 5 = 8$$

$$1 \text{ part} = \frac{960}{8} = 120$$

$$A = 3 \times 120 = 360$$

**Final Answer**                      Rs. 360 — Option B

**MCQ 93**

If  $A : B = 4 : 5$  and  $B : C = 10 : 7$ , find  $A : B : C$ .

- A. 4:5:7                                      B. 8:10:7  
C. 8:5:7                                      D. 4:10:7

**Solution**

$$A : B = 4 : 5 = 8 : 10$$

$$B : C = 10 : 7$$

$$A : B : C = 8 : 10 : 7$$

**Final Answer**                      8 : 10 : 7 — Option B

**MCQ 94**

If  $x : y = 3 : 4$ , find  $(2x + y) : (x + 2y)$ .

- A. 10:11                                      B. 10:12  
C. 11:10                                      D. 12:11

**Solution**

$$x = 3k, y = 4k$$

$$2x + y = 6k + 4k = 10k$$

$$x + 2y = 3k + 8k = 11k$$

$$(2x + y) : (x + 2y) = 10 : 11$$

**Final Answer**                      10 : 11 — Option A

**MCQ 95**

The ratio of boys to girls is 2 : 3. What percentage of the group are girls?

- A. 40%                      B. 50%  
C. 60%                      D.  $66\frac{2}{3}\%$

**Solution**

$$\text{Total parts} = 2 + 3 = 5$$

$$\text{Girls fraction} = \frac{3}{5}$$

$$\frac{3}{5} \times 100 = 60\%$$

**Final Answer**

60% — Option C

**MCQ 96**

If  $a : b = 5 : 7$ , find  $\frac{a}{a+b}$ .

- A.  $\frac{5}{7}$                       B.  $\frac{5}{12}$   
C.  $\frac{7}{12}$                       D.  $\frac{5}{5}$

**Solution**

$$a = 5k, b = 7k$$

$$\frac{a}{a+b} = \frac{5k}{12k} = \frac{5}{12}$$

**Final Answer** $\frac{5}{12}$  — Option B**MCQ 97**

If  $A : B = 3 : 4$  and  $B : C = 2 : 5$ , find  $A : C$ .

- A. 3:5                      B. 3:10  
C. 4:5                      D. 6:20

**Solution**

$$A : B = 3 : 4$$

$$B : C = 2 : 5 = 4 : 10$$

$$A : C = 3 : 10$$

**Final Answer**

3 : 10 — Option B

**MCQ 98**

Two numbers are in the ratio 5 : 7. Their sum is 144. Find their difference.

- A. 12                      B. 18  
C. 24                      D. 28

**Solution**

$$\text{Total parts} = 5 + 7 = 12$$

$$1 \text{ part} = \frac{144}{12} = 12$$

$$\text{Difference} = (7 - 5) \times 12 = 24$$

**Final Answer**

24 — Option C

**MCQ 99**

If 12 men can build a wall in 15 days, how many men are needed to build it in 9 days?

- A. 18                      B. 20  
C. 22                      D. 24

**Solution**

$$\text{Work} = 12 \times 15 = 180 \text{ man-days}$$

$$m \times 9 = 180$$

$$m = \frac{180}{9} = 20$$

**Final Answer**

20 — Option B

**MCQ 100**

A recipe uses flour and sugar in the ratio 5 : 2. If flour is 750 g, how much sugar is required?

- A. 250 g                      B. 300 g  
C. 320 g                      D. 350 g

**Solution**

$$5 \text{ parts} = 750$$

$$1 \text{ part} = 150$$

$$\text{Sugar} = 2 \times 150 = 300 \text{ g}$$

**Final Answer**

300 g — Option B

## Ratio & Proportion - Rapid Revision Grid

### Ratio

$$a : b = \frac{a}{b}$$

$$a : b = ka : kb$$

$$\text{Share} = \frac{\text{ratio part}}{\text{sum of parts}} \times \text{Total}$$

### Direct proportion

$$x \uparrow \Rightarrow y \uparrow$$

$$\frac{x_1}{y_1} = \frac{x_2}{y_2}$$

### Inverse proportion

$$x \uparrow \Rightarrow y \downarrow$$

$$x_1 y_1 = x_2 y_2$$

### Proportion

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

$$\text{Missing term} = \frac{\text{product of cross terms}}{\text{remaining term}}$$