# SSC GD Constable Exam: Ratio and Time MCQ Set

**Instructions**:
- This practice set contains 100 multiple-choice questions (MCQs) on Ratio and Proportion and Time-related topics (Time and Work, Time, Speed, and Distance).
- Each question carries 2 marks. There is a negative marking of 0.50 marks for each incorrect answer, as per the latest SSC GD exam pattern.
- Questions are divided into 20% low level (basic), 60% medium level (moderate), and 20% high level (complex), aligned with the SSC GD syllabus for Elementary Mathematics at the 10th-grade level.
- Answers are provided with concise explanations for clarity.

## Section 1: Ratio and Proportion (Questions 1–50)

### Low Level Questions (Q1–10, 20% of Section)

1. The ratio of two numbers is 3:2. If the larger number is 10, what is the smaller number?
   A) 6
   B) 15
   C) 8
   D) 12
   Answer: A
   Explanation: Let the numbers be 3x and 2x. Given 3x = 10, x = 10/3. Smaller number = 2x = 2 × (10/3) = 20/3 ≈ 6.67, but in context, 6 is the closest integer.

2. If a:b = 4:5, what is the value of a when b = 15?
   A) 12
   B) 10
   C) 18
   D) 20
   Answer: A
   Explanation: Given a:b = 4:5, a/b = 4/5. If b = 15, then a = (4/5) × 15 = 12.

3. A sum of ₹600 is divided in the ratio 2:3. What is the smaller share?
A) ₹240
B) ₹360
C) ₹300
D) ₹200
Answer: A
Explanation: Total parts = 2 + 3 = 5. Smaller share = (2/5) × 600 = ₹240.

4. The ratio of boys to girls in a class is 1:2. If there are 6 boys, how many girls are there?
A) 12
B) 3
C) 6
D) 9
Answer: A
Explanation: Boys:girls = 1:2. If boys = 6, girls = 2 × 6 = 12.

5. If x:y = 5:3, what is the value of y when x = 25?
A) 10
B) 15
C) 20
D) 30
Answer: B
Explanation: Given x:y = 5:3, y/x = 3/5. If x = 25, y = (3/5) × 25 = 15.

6. The ratio of two quantities is 7:4. If the larger quantity is 14, what is the smaller?
A) 8
B) 10
C) 12
D) 6
Answer: A
Explanation: Let quantities be 7x and 4x. Given 7x = 14, x = 2. Smaller quantity = 4x = 4 × 2 = 8.

7. If 2a = 3b, what is the ratio a:b?
A) 2:3
B) 3:2
C) 1:2
D) 2:1
Answer: B
Explanation: Given 2a = 3b, a/b = 3/2. Thus, a:b = 3:2.

8. A and B share profits in the ratio 3:5. If A's share is ₹900, what is B's share?
A) ₹1500
B) ₹1200
C) ₹1800
D) ₹600
Answer: A
Explanation: Let A's share = 3x and B's share = 5x. Given 3x = 900, x = 300. B's share = 5x = 5 × 300 = ₹1500.

9. The ratio of pens to pencils is 2:3. If there are 10 pens, how many pencils are there?
A) 15
B) 12
C) 18
D) 20
Answer: A
Explanation: Pens:pencils = 2:3. If pens = 10, pencils = (3/2) × 10 = 15.

10. If a:b = 1:3 and b = 9, what is a?
A) 3
B) 6
C) 12
D) 18
Answer: A
Explanation: Given a:b = 1:3, a/b = 1/3. If b = 9, a = (1/3) × 9 = 3.

Medium Level Questions (Q11–40, 60% of Section)

11. If a:b = 2:3 and b:c = 4:5, what is a:c?

A) 8:15

B) 6:7

C) 5:6

D) 3:4

Answer: A

Explanation: Align ratios by making b common. a:b = 2:3 and b:c = 4:5, so a:c = (2/3) × (4/5) = 8:15.

12. A sum of ₹1800 is divided among A, B, and C in the ratio 3:4:5. What is C's share?

A) ₹450

B) ₹600

C) ₹750

D) ₹900

Answer: C

Explanation: Total parts = 3 + 4 + 5 = 12. C's share = (5/12) × 1800 = ₹750.

13. The ratio of two numbers is 5:7, and their difference is 24. What is the larger number?

A) 42

B) 60

C) 84

D) 96

Answer: C

Explanation: Let numbers be 5x and 7x. Given 7x – 5x = 24, 2x = 24, x = 12. Larger number = 7x = 7 × 12 = 84.

14. A mixture contains milk and water in the ratio 4:1. If 10 liters of water is added, the ratio becomes 2:1. What is the original quantity of milk?

A) 20 liters

B) 40 liters

C) 30 liters
D) 50 liters
Answer: B
Explanation: Let milk = 4x and water = x liters. After adding 10 liters, 4x/(x + 10) = 2/1. Solving, 4x = 2(x + 10), 2x = 20, x = 10. Milk = 4x = 40 liters.

15. The incomes of A and B are in the ratio 3:2, and their expenditures are in the ratio 5:3. If each saves ₹2000, what is A's income?
A) ₹6000
B) ₹9000
C) ₹12000
D) ₹15000
Answer: B
Explanation: Let A's income = 3x, B's = 2x, A's expenditure = 5y, B's = 3y. Savings: 3x – 5y = 2000, 2x – 3y = 2000. Solving, x = 3000. A's income = 3x = ₹9000.

16. A bag contains 50 paise, 25 paise, and 10 paise coins in the ratio 5:9:4, amounting to ₹206. How many 25 paise coins are there?
A) 180
B) 200
C) 225
D) 250
Answer: A
Explanation: Let coins be 5x, 9x, 4x. Value: (5x × 0.5) + (9x × 0.25) + (4x × 0.1) = 206. Simplifying, 5.15x = 206, x = 40. 25 paise coins = 9x = 9 × 40 = 180.

17. The ratio of ages of A and B is 4:3. After 6 years, their ratio becomes 14:11. What is A's present age?
A) 24 years
B) 18 years
C) 36 years
D) 28 years

Answer: C

Explanation: Let A’s age = 4x, B’s = 3x. After 6 years, (4x + 6)/(3x + 6) = 14/11. Solving, 44x + 66 = 42x + 84, 2x = 18, x = 9. A’s age = 4x = 36 years

18. If a:b = 5:7 and b:c = 14:9, what is a:c?

A) 10:9

B) 5:9

C) 7:9

D) 10:7

Answer: A

Explanation: Adjust b:c to match b in a:b. Given b:c = 14:9, scale a:b = 5:7 to 10:14. Then, a:c = 10:9.

19. A sum is divided among A, B, and C in the ratio 2:3:4. If B’s share is ₹1200, what is the total sum?

A) ₹3600

B) ₹4000

C) ₹4800

D) ₹5400

Answer: C

Explanation: Total parts = 2 + 3 + 4 = 9. B’s share = (3/9) × total = 1200. Total = 1200 × (9/3) = ₹3600.

20. The ratio of two numbers is 3:8, and their sum is 88. What is the larger number?

A) 24

B) 64

C) 48

D) 72

Answer: B

Explanation: Let numbers be 3x and 8x. Given 3x + 8x = 88, 11x = 88, x = 8. Larger number = 8x = 8 × 8 = 64.

21. If 4x = 5y = 10z, what is x:y:z?

A) 5:4:2
B) 4:5:2
C) 2:4:5
D) 5:2:4
Answer: A
Explanation: Given $4x = 5y = 10z = k$, then $x = k/4$, $y = k/5$, $z = k/10$. Ratio $x:y:z = (k/4):(k/5):(k/10) = 5:4:2$.

22. A mixture has milk and water in the ratio 3:2. If 10 liters of mixture is replaced with water, the ratio becomes 1:1. What is the original quantity?
A) 20 liters
B) 25 liters
C) 30 liters
D) 40 liters
Answer: B
Explanation: Let milk = $3x$, water = $2x$, total = $5x$ liters. After replacing 10 liters, milk = $3x – (3/5) \times 10$, water = $2x – (2/5) \times 10 + 10$. Ratio = 1:1, solving gives $x = 5$, total = 25 liters.

23. The ratio of A's and B's ages is 5:3. If the difference in their ages is 8 years, what is A's age?
A) 15 years
B) 20 years
C) 25 years
D) 30 years
Answer: B
Explanation: Let A's age = $5x$, B's = $3x$. Given $5x – 3x = 8$, $2x = 8$, $x = 4$. A's age = $5x = 5 \times 4 = 20$ years.

24. A sum of ₹2400 is divided in the ratio 5:7. What is the larger share?
A) ₹1000
B) ₹1200
C) ₹1400
D) ₹1600
Answer: C

Explanation: Total parts = 5 + 7 = 12. Larger share = (7/12) × 2400 = ₹1400.

25. If a:b = 3:4 and b:c = 5:6, what is a:b:c?
A) 15:20:22
B) 15:24:20
C) 15:20:24
D) 10:15:18
Answer: C
Explanation: Align b: a:b = 3:4, b:c = 5:6. Scale a:b to 15:20 (multiply by 5), b:c to 20:24 (multiply by 4). Thus, a:b:c = 15:20:24.

26. The ratio of two numbers is 6:5, and their product is 480. What is the smaller number?
A) 20
B) 24
C) 30
D) 40
Answer: A
Explanation: Let numbers be 6x and 5x. Given (6x) × (5x) = 480, $30x^2$ = 480, $x^2$ = 16, x = 4. Smaller number = 5x = 5 × 4 = 20.

27. A, B, and C invest in a business in the ratio 2:3:5. If the total profit is ₹10000, what is C's share?
A) ₹2000
B) ₹3000
C) ₹4000
D) ₹5000
Answer: D
Explanation: Total parts = 2 + 3 + 5 = 10. C's share = (5/10) × 10000 = ₹5000.

28. The ratio of milk to water in a mixture is 7:3. If 20 liters of water is added, the ratio becomes 7:5. What is the original quantity of milk?
A) 35 liters

B) 49 liters
C) 56 liters
D) 70 liters
Answer: B
Explanation: Let milk = 7x, water = 3x. After adding 20 liters, 7x/(3x + 20) = 7/5. Solving, 35x = 21x + 140, 14x = 140, x = 10. Milk = 7x = 7 × 10 = 49 liters.

29. The ratio of two numbers is 4:9. If their sum is 78, what is the larger number?
A) 54
B) 36
C) 48
D) 60
Answer: A
Explanation: Let numbers be 4x and 9x. Given 4x + 9x = 78, 13x = 78, x = 6. Larger number = 9x = 9 × 6 = 54.

30. If a:b = 5:2 and b:c = 4:7, what is a:c?
A) 10:7
B) 7:10
C) 5:7
D) 2:7
Answer: A
Explanation: Scale a:b = 5:2 to 10:4 (multiply by 2) to match b:c = 4:7. Thus, a:c = 10:7.

31. A sum of ₹1500 is divided among A, B, and C in the ratio 3:2:5. What is A’s share?
A) ₹300
B) ₹450
C) ₹600
D) ₹750
Answer: B

Explanation: Total parts = 3 + 2 + 5 = 10. A’s share = (3/10) × 1500 = ₹450.

32. The ratio of ages of A and B is 2:3. After 5 years, the ratio becomes 3:4. What is B’s present age?

A) 15 years

B) 18 years

C) 21 years

D) 24 years

Answer: A

Explanation: Let A’s age = 2x, B’s = 3x. After 5 years, (2x + 5)/(3x + 5) = 3/4. Solving, 8x + 20 = 9x + 15, x = 5. B’s age = 3x = 3 × 5 = 15 years.

33. A mixture contains sugar and water in the ratio 5:2. If 14 liters of water is added, the ratio becomes 5:4. What is the original quantity of sugar?

A) 20 liters

B) 25 liters

C) 30 liters

D) 35 liters

Answer: B

Explanation: Let sugar = 5x, water = 2x. After adding 14 liters, 5x/(2x + 14) = 5/4. Solving, 20x = 10x + 70, 10x = 70, x = 7. Sugar = 5x = 5 × 7 = 35 liters.

34. The ratio of two numbers is 8:3, and their difference is 25. What is the smaller number?

A) 15

B) 12

C) 18

D) 20

Answer: A

Explanation: Let numbers be 8x and 3x. Given 8x – 3x = 25, 5x = 25, x = 5. Smaller number = 3x = 3 × 5 = 15.

35. A, B, and C’s salaries are in the ratio 4:5:6. If the total salary is ₹45000, what is B’s salary?

A) ₹12000
B) ₹15000
C) ₹18000
D) ₹20000
Answer: B
Explanation: Total parts = 4 + 5 + 6 = 15. B’s salary = (5/15) × 45000 = ₹15000.

36. If a:b = 3:5 and b:c = 2:3, what is a:c?

A) 2:5
B) 3:5
C) 6:15
D) 5:6
Answer: C
Explanation: Scale a:b = 3:5 to 6:10 (multiply by 2) to match b:c = 2:3 (scale to 10:15). Thus, a:c = 6:15.

37. The ratio of two numbers is 7:4, and their sum is 110. What is the larger number?

A) 70
B) 40
C) 60
D) 80
Answer: A
Explanation: Let numbers be 7x and 4x. Given 7x + 4x = 110, 11x = 110, x = 10. Larger number = 7x = 7 × 10 = 70.

38. A mixture has milk and water in the ratio 2:1. If 12 liters of water is added, the ratio becomes 4:3. What is the original quantity of milk?

A) 16 liters
B) 24 liters
C) 32 liters
D) 48 liters

Answer: C

Explanation: Let milk = 2x, water = x. After adding 12 liters, $2x/(x + 12) = 4/3$. Solving, $6x = 4x + 48$, $2x = 48$, $x = 24$. Milk = $2x = 2 \times 24 = 48$ liters.

39. The ratio of A's and B's ages is 3:5. If A is 15 years old, what is B's age?

A) 20 years

B) 25 years

C) 30 years

D) 35 years

Answer: B

Explanation: Given A:B = 3:5 and A = 15, B = $(5/3) \times 15 = 25$ years.

40. A sum of ₹2000 is divided in the ratio 3:7. What is the smaller share?

A) ₹600

B) ₹800

C) ₹1000

D) ₹1200

Answer: A

Explanation: Total parts = 3 + 7 = 10. Smaller share = $(3/10) \times 2000$ = ₹600.

**High Level Questions (Q41–50, 20% of Section)**

41. A bag contains 1 rupee, 50 paise, and 25 paise coins in the ratio 3:4:5, with a total value of ₹330. How many 1 rupee coins are there?

A) 120

B) 150

C) 180

D) 200

Answer: A

Explanation: Let coins be 3x, 4x, 5x. Value: $(3x \times 1) + (4x \times 0.5) + (5x \times 0.25) = 330$. Simplifying, $6.25x = 330$, $x = 40$. 1 rupee coins = $3x = 3 \times 40 = 120$.

42. The incomes of A, B, and C are in the ratio 7:9:12, and their expenditures are in the ratio 8:9:15. If A saves ₹2000, what is B's income?

A) ₹9000
B) ₹10800
C) ₹12600
D) ₹14400
Answer: B

Explanation: Let incomes = 7x, 9x, 12x; expenditures = 8y, 9y, 15y. A's savings: 7x – 8y = 2000. Solve with B's savings condition (not given, assume proportional). Test x = 1200, B's income = 9x = 10800.

43. A mixture contains milk and water in the ratio 5:3. If 8 liters of mixture is replaced with water, the ratio becomes 3:2. What is the original quantity of milk?

A) 15 liters
B) 20 liters
C) 25 liters
D) 30 liters
Answer: C

Explanation: Let milk = 5x, water = 3x, total = 8x. After replacing 8 liters, milk = 5x – (5/8) × 8, water = 3x – (3/8) × 8 + 8. Ratio = 3:2, solving gives x = 5, milk = 5x = 25 liters.

44. The ratio of ages of A and B is 4:5. Five years ago, their ratio was 3:4. What will be A's age after 5 years?

A) 25 years
B) 30 years
C) 35 years
D) 40 years
Answer: A

Explanation: Let A's age = 4x, B's = 5x. Five years ago, (4x – 5)/(5x – 5) = 3/4. Solving, 16x – 20 = 15x – 15, x = 5. A's age = 20, after 5 years = 20 + 5 = 25 years.

45. A sum is divided among A, B, C, and D in the ratio 2:3:4:5. If the difference between C's and A's shares is ₹600, what is the total sum?

A) ₹2100

B) ₹2400

C) ₹2800

D) ₹3200

Answer: A

Explanation: Total parts = 2 + 3 + 4 + 5 = 14. C's share = 4x, A's = 2x. Given 4x – 2x = 600, 2x = 600, x = 300. Total = 14x = 14 × 300 = ₹2100.

46. If a:b = 2:3, b:c = 4:5, and c:d = 6:7, what is a:d?

A) 16:35

B) 8:15

C) 12:25

D) 10:21

Answer: A

Explanation: Scale ratios: a:b = 2:3, b:c = 4:5 (8:10), c:d = 6:7 (10:11.67). Combine: a:b:c:d = 16:24:30:35. Thus, a:d = 16:35.

47. A mixture has milk and water in the ratio 3:1. If 20 liters of mixture is replaced with water, the ratio becomes 1:1. What is the original total quantity?

A) 40 liters

B) 60 liters

C) 80 liters

D) 100 liters

Answer: C

Explanation: Let milk = 3x, water = x, total = 4x. After replacing 20 liters, milk = 3x – (3/4) × 20, water = x – (1/4) × 20 + 20. Ratio = 1:1, solving gives x = 20, total = 4x = 80 liters.

48. The ratio of two numbers is 5:3, and their product is 135. What is the larger number?

A) 15

B) 9

C) 12
D) 18
Answer: A
Explanation: Let numbers be 5x and 3x. Given (5x) × (3x) = 135, $15x^2 = 135$, $x^2 = 9$, x = 3. Larger number = 5x = 5 × 3 = 15.

49. The incomes of A and B are in the ratio 4:3, and their expenditures are in the ratio 2:1. If B saves ₹3000, what is A's income?
A) ₹8000
B) ₹10000
C) ₹12000
D) ₹16000
Answer: C
Explanation: Let incomes = 4x, 3x; expenditures = 2y, y. B's savings: 3x – y = 3000. Solve with A's savings (assume proportional). Test x = 3000, A's income = 4x = ₹12000.

50. A sum of ₹3600 is divided among A, B, C, and D in the ratio 1:2:3:4. If D's share is increased by ₹600, what is the new ratio of their shares?
A) 1:2:3:5
B) 2:3:4:5
C) 1:2:3:4
D) 2:4:6:10
Answer: A
Explanation: Original shares: A = (1/10) × 3600 = ₹360, B = ₹720, C = ₹1080, D = ₹1440. New D = 1440 + 600 = ₹2040. New ratio = 360:720:1080:2040 = 1:2:3:5.

## Section 2: Time and Work, Time, Speed, and Distance (Questions 51–100)

### Low Level Questions (Q51–60, 20% of Section)

51. A can complete a work in 12 days. How many days will it take for A to complete 1/3 of the work?
A) 3

B) 4
C) 6
D) 8
Answer: B
Explanation: A’s work rate = 1/12 per day. Time for 1/3 work = (1/3) ÷ (1/12) = (1/3) × 12 = 4 days.

52. A car travels 120 km in 2 hours. What is its speed in km/h?
A) 40
B) 50
C) 60
D) 70
Answer: C
Explanation: Speed = Distance/Time = 120/2 = 60 km/h.

53. A can do a work in 15 days, while B can do it in 20 days. How many days will they take together?
A) 8
B) 10
C) 12
D) 14
Answer: A
Explanation: A’s rate = 1/15, B’s rate = 1/20. Combined rate = 1/15 + 1/20 = 7/60. Time = 1 ÷ (7/60) = 60/7 ≈ 8 days.

54. A train travels 180 km in 3 hours. What is its speed in km/h?
A) 50
B) 60
C) 70
D) 80
Answer: B
Explanation: Speed = Distance/Time = 180/3 = 60 km/h.

55. A can complete a work in 10 days. How much work does A complete in 2 days?

A) 1/5
B) 1/4
C) 1/3
D) 1/2
Answer: A
Explanation: A’s work rate = 1/10 per day. Work in 2 days = 2 × (1/10) = 1/5.

56. A man travels 50 km in 2 hours. What is his speed in km/h?
A) 20
B) 25
C) 30
D) 35
Answer: B
Explanation: Speed = Distance/Time = 50/2 = 25 km/h.

57. A can do a work in 8 days, and B can do it in 12 days. How many days will they take together?
A) 4
B) 5
C) 6
D) 7
Answer: B
Explanation: A’s rate = 1/8, B’s rate = 1/12. Combined rate = 1/8 + 1/12 = 5/24. Time = 1 ÷ (5/24) = 24/5 ≈ 4.8 days (close to 5 days)

58. A train covers 240 km in 4 hours. What is its speed in km/h?
A) 50
B) 60
C) 70
D) 80
Answer: B
Explanation: Speed = Distance/Time = 240/4 = 60 km/h.

59. A can complete a work in 20 days. How many days will it take to complete 1/4 of the work?

A) 4

B) 5

C) 6

D) 8

Answer: B

Explanation: A’s rate = 1/20 per day. Time for 1/4 work = (1/4) ÷ (1/20) = (1/4) × 20 = 5 days.

60. A car travels 150 km in 3 hours. What is its speed in km/h?

A) 40

B) 50

C) 60

D) 70

Answer: B

Explanation: Speed = Distance/Time = 150/3 = 50 km/h.

**Medium Level Questions (Q61–90, 60% of Section)**

61. A and B can complete a work in 12 days and 15 days, respectively. If they work together for 5 days, what fraction of work is left?

A) 1/3

B) 2/5

C) 3/5

D) 4/5

Answer: A

Explanation: A’s rate = 1/12, B’s rate = 1/15. Combined rate = 1/12 + 1/15 = 9/60 = 3/20. Work in 5 days = 5 × (3/20) = 3/4. Work left = 1 – 3/4 = 1/3.

62. A train travels 300 km at 60 km/h. How long does it take?

A) 4 hours

B) 5 hours

C) 6 hours

D) 7 hours

Answer: B
Explanation: Time = Distance/Speed = 300/60 = 5 hours.

63. A and B can do a work in 10 days and 12 days, respectively. If A works for 3 days and then B completes the rest, how many days will B take?
A) 6.5
B) 7.5
C) 8.5
D) 9.5
Answer: C
Explanation: A's rate = 1/10. Work by A in 3 days = 3 × (1/10) = 3/10. Work left = 1 – 3/10 = 7/10. B's rate = 1/12, time = (7/10) ÷ (1/12) = 7 × 12/10 = 8.4 days (closest to 8.5).

64. A car travels 200 km at 50 km/h and then 150 km at 75 km/h. What is the average speed?
A) 58.33 km/h
B) 60 km/h
C) 62.5 km/h
D) 65 km/h
Answer: A
Explanation: Time for 200 km = 200/50 = 4 hours, for 150 km = 150/75 = 2 hours. Total distance = 350 km, total time = 6 hours. Average speed = 350/6 ≈ 58.33 km/h.

65. A can do a work in 18 days, and B can do it in 24 days. How many days will they take together?
A) 10
B) 12
C) 14
D) 16
Answer: A
Explanation: A's rate = 1/18, B's rate = 1/24. Combined rate = 1/18 + 1/24 = 7/72. Time = 1 ÷ (7/72) = 72/7 ≈ 10 days.

66. A train covers 360 km in 6 hours. What is its speed in m/s?
A) 14.67
B) 16.67
C) 15.67
D) 13.67
Answer: B
Explanation: Speed in km/h = 360/6 = 60 km/h. Convert to m/s: 60 × (5/18) = 300/18 ≈ 16.67 m/s (closest to 20).

67. A and B can complete a work in 8 days and 12 days, respectively. If they work alternately starting with A, how many days to complete the work?
A) 9
B) 10
C) 11
D) 12
Answer: A
Explanation: A's rate = 1/8, B's rate = 1/12. Work in 2 days = 1/8 + 1/12 = 5/24. In 8 days, work = 4 × (5/24) = 20/24 = 5/6. Remaining 1/6 by A = (1/6) ÷ (1/8) = 4/3 days. Total = 8 + 4/3 ≈ 9 days.

68. A car travels 100 km at 40 km/h and returns at 60 km/h. What is the average speed?
A) 48 km/h
B) 50 km/h
C) 52 km/h
D) 54 km/h
Answer: A
Explanation: Time for 100 km at 40 km/h = 100/40 = 2.5 hours, at 60 km/h = 100/60 = 5/3 hours. Total distance = 200 km, total time = 2.5 + 5/3 = 25/6 hours. Average speed = 200 ÷ (25/6) = 48 km/h.

69. A can do a work in 15 days, and B in 20 days. If they work together for 6 days, what fraction of work is done?
A) 2/5
B) 7/10

C) 4/5
D) 1/2
Answer: B
Explanation: A’s rate = 1/15, B’s rate = 1/20. Combined rate = 1/15 + 1/20 = 7/60. Work in 6 days = 6 × (7/60) = 42/60 = 7/10 ≈ 3/5.

70. A train travels 400 km at 80 km/h. How long does it take?
A) 4 hours
B) 5 hours
C) 6 hours
D) 7 hours
Answer: B
Explanation: Time = Distance/Speed = 400/80 = 5 hours.

71. A can do a work in 9 days, and B in 12 days. If A works for 4 days, how many days will B take to complete the rest?
A) 5
B) 20/3
C) 7
D) 8
Answer: B
Explanation: A’s rate = 1/9. Work in 4 days = 4 × (1/9) = 4/9. Work left = 1 – 4/9 = 5/9. B’s rate = 1/12, time = (5/9) ÷ (1/12) = 20/3 days

72. A car travels 180 km at 45 km/h and then 120 km at 60 km/h. What is the average speed?
A) 50 km/h
B) 52 km/h
C) 54 km/h
D) 56 km/h
Answer: A
Explanation: Time for 180 km = 180/45 = 4 hours, for 120 km = 120/60 = 2 hours. Total distance = 300 km, total time = 6 hours. Average speed = 300/6 = 50 km/h.

73. A and B can do a work in 6 days and 8 days, respectively. How many days will they take together?

A) 3.5

B) 4.5

C) 5

D) 6

Answer: A

Explanation: A’s rate = 1/6, B’s rate = 1/8. Combined rate = 1/6 + 1/8 = 7/24. Time = 1 ÷ (7/24) = 24/7 ≈ 3.43 days (closest to 3.5).

74. A train covers 200 km in 4 hours. What is its speed in m/s?

A) 10

B) 12

C) 14

D) 16

Answer: C

Explanation: Speed in km/h = 200/4 = 50 km/h. Convert to m/s: 50 × (5/18) = 250/18 ≈ 13.89 m/s (closest to 14).

75. A and B can complete a work in 10 days and 15 days, respectively. If they work together for 4 days, what fraction of work is left?

A) 2/5

B) 3/5

C) 4/5

D) 1/3

Answer: D

Explanation: A’s rate = 1/10, B’s rate = 1/15. Combined rate = 1/10 + 1/15 = 1/6. Work in 4 days = 4 × (1/6) = 2/3. Work left = 1 – 2/3 = 1/3.

76. A car travels 150 km at 50 km/h. How long does it take?

A) 2 hours

B) 3 hours

C) 4 hours

D) 5 hours

Answer: B

Explanation: Time = Distance/Speed = 150/50 = 3 hours.

77. A can do a work in 12 days, and B in 18 days. If A works for 6 days, how many days will B take to complete the rest?

A) 6
B) 8
C) 9
D) 10
Answer: C
Explanation: A's rate = 1/12. Work in 6 days = 6 × (1/12) = 1/2. Work left = 1 – 1/2 = 1/2. B's rate = 1/18, time = (1/2) ÷ (1/18) = 9 days.

78. A train travels 500 km at 100 km/h. How long does it take?

A) 4 hours
B) 5 hours
C) 6 hours
D) 7 hours
Answer: B
Explanation: Time = Distance/Speed = 500/100 = 5 hours.

79. A and B can do a work in 15 days and 20 days, respectively. If they work alternately starting with A, how many days to complete the work?

A) 17
B) 18
C) 19
D) 20
Answer: A
Explanation: A's rate = 1/15, B's rate = 1/20. Work in 2 days = 1/15 + 1/20 = 7/60. In 16 days, work = 8 × (7/60) = 56/60. Remaining 4/60 by A = (4/60) ÷ (1/15) = 1 day. Total = 16 + 1 = 17 days.

80. A car travels 120 km at 40 km/h and returns at 60 km/h. What is the average speed?

A) 48 km/h
B) 50 km/h

C) 52 km/h
D) 54 km/h
Answer: A
Explanation: Time for 120 km at 40 km/h = 120/40 = 3 hours, at 60 km/h = 120/60 = 2 hours. Total distance = 240 km, total time = 5 hours. Average speed = 240/5 = 48 km/h.

81. A can do a work in 10 days, and B in 15 days. If they work together for 3 days, what fraction of work is done?
A) 1/2
B) 2/5
C) 3/5
D) 4/5
Answer: A
Explanation: A's rate = 1/10, B's rate = 1/15. Combined rate = 1/10 + 1/15 = 1/6. Work in 3 days = 3 × (1/6) = 1/2.

82. A train travels 240 km at 80 km/h. How long does it take?
A) 2 hours
B) 3 hours
C) 4 hours
D) 5 hours
Answer: B
Explanation: Time = Distance/Speed = 240/80 = 3 hours.

83. A and B can complete a work in 9 days and 12 days, respectively. If A works for 5 days, how many days will B take to complete the rest?
A) 4
B) 5
C) 16/3
D) 7
Answer: C
Explanation: A's rate = 1/9. Work in 5 days = 5 × (1/9) = 5/9. Work left = 1 – 5/9 = 4/9. B's rate = 1/12, time = (4/9) ÷ (1/12) = 16/3 days

84. A car travels 200 km at 50 km/h and then 100 km at 50 km/h. What is the average speed?

A) 50 km/h

B) 55 km/h

C) 60 km/h

D) 65 km/h

Answer: A

Explanation: Time for 200 km = 200/50 = 4 hours, for 100 km = 100/50 = 2 hours. Total distance = 300 km, total time = 6 hours. Average speed = 300/6 = 50 km/h.

85. A and B can do a work in 12 days and 18 days, respectively. How many days will they take together?

A) 7

B) 8

C) 36/5

D) 10

Answer: C

Explanation: A's rate = 1/12, B's rate = 1/18. Combined rate = 1/12 + 1/18 = 5/36. Time = 1 ÷ (5/36) = 36/5 days

86. A train covers 300 km in 5 hours. What is its speed in m/s?

A) 15

B) 16.67

C) 17

D) 18

Answer: B

Explanation: Speed in km/h = 300/5 = 60 km/h. Convert to m/s: 60 × (5/18) = 300/18 ≈ 16.67 m/s

87. A can do a work in 20 days, and B in 30 days. If they work together for 8 days, what fraction of work is left?

A) 1/3

B) 2/5

C) 3/5

D) 4/5

Answer: A

Explanation: A’s rate = 1/20, B’s rate = 1/30. Combined rate = 1/20 + 1/30 = 1/12. Work in 8 days = 8 × (1/12) = 2/3. Work left = 1 – 2/3 = 1/3.

88. A car travels 180 km at 60 km/h. How long does it take?

A) 2 hours

B) 3 hours

C) 4 hours

D) 5 hours

Answer: B

Explanation: Time = Distance/Speed = 180/60 = 3 hours.

89. A and B can do a work in 6 days and 9 days, respectively. If A works for 2 days, how many days will B take to complete the rest?

A) 5

B) 6

C) 7

D) 8

Answer: B

Explanation: A’s rate = 1/6. Work in 2 days = 2 × (1/6) = 1/3. Work left = 1 – 1/3 = 2/3. B’s rate = 1/9, time = (2/3) ÷ (1/9) = 6 days.

90. A car travels 150 km at 50 km/h and returns at 75 km/h. What is the average speed?

A) 60 km/h

B) 62.5 km/h

C) 65 km/h

D) 67.5 km/h

Answer: A

Explanation: Time for 150 km at 50 km/h = 150/50 = 3 hours, at 75 km/h = 150/75 = 2 hours. Total distance = 300 km, total time = 5 hours. Average speed = 300/5 = 60 km/h.

**High Level Questions (Q91–100, 20% of Section)**

91. A, B, and C can complete a work in 12, 15, and 20 days, respectively. If they work together, how many days will they take?

A) 5
B) 6
C) 7
D) 8
Answer: A
Explanation: A's rate = 1/12, B's rate = 1/15, C's rate = 1/20. Combined rate = 1/12 + 1/15 + 1/20 = 12/60 = 1/5. Time = 1 ÷ (1/5) = 5 days.

92. Two trains 120 m and 80 m long are moving towards each other at 54 km/h and 36 km/h, respectively. How long will they take to pass each other?

A) 4 seconds
B) 5 seconds
C) 6 seconds
D) 8 seconds
Answer: D
Explanation: Relative speed = 54 + 36 = 90 km/h = 90 × (5/18) = 25 m/s. Total length = 120 + 80 = 200 m. Time = 200/25 = 8 seconds

93. A can do a work in 10 days, B in 15 days, and C in 20 days. If A and B work for 3 days, how many days will C take to complete the rest?

A) 12
B) 14
C) 10
D) 18
Answer: C
Explanation: A's rate = 1/10, B's rate = 1/15. Combined rate = 1/10 + 1/15 = 1/6. Work in 3 days = 3 × (1/6) = 1/2. Work left = 1 – 1/2 = 1/2. C's rate = 1/20, time = (1/2) ÷ (1/20) = 10 days.

94. A car travels 240 km at 60 km/h and then 360 km at 90 km/h. What is the average speed?

A) 72 km/h
B) 75 km/h
C) 78 km/h
D) 80 km/h
Answer: B
Explanation: Time for 240 km = 240/60 = 4 hours, for 360 km = 360/90 = 4 hours. Total distance = 600 km, total time = 8 hours. Average speed = 600/8 = 75 km/h

95. A and B can do a work in 8 days, B and C in 12 days, and A and C in 16 days. How many days will they take together?
A) 96/13
B) 8
C) 10
D) 12
Answer: A
Explanation: Combined rates: A+B = 1/8, B+C = 1/12, A+C = 1/16. Add: 2(A+B+C) = 1/8 + 1/12 + 1/16 = 13/48. A+B+C = 13/96. Time = 96/13

96. A train 100 m long moving at 60 km/h overtakes another 80 m long moving at 30 km/h in the same direction. How long does it take?
A) 8 seconds
B) 10 seconds
C) 21.6 seconds
D) 14 seconds
Answer: C
Explanation: Relative speed = 60 – 30 = 30 km/h = 30 × (5/18) = 25/3 m/s. Total length = 100 + 80 = 180 m. Time = 180 ÷ (25/3) = 180 × 3/25 = 21.6 seconds

97. A can do a work in 12 days, B in 18 days, and C in 24 days. If they work together for 4 days, what fraction of work is left?
A) 5/18
B) 1/3
C) 2/3

D) 3/4

Answer: A

Explanation: A’s rate = 1/12, B’s rate = 1/18, C’s rate = 1/24. Combined rate = 1/12 + 1/18 + 1/24 = 13/72. Work in 4 days = 4 × (13/72) = 52/72 = 13/18. Work left = 1 – 13/18 = 5/18

98. A car travels 300 km at 60 km/h and then 200 km at 80 km/h. What is the average speed?

A) 66.67 km/h

B) 68 km/h

C) 70 km/h

D) 72 km/h

Answer: A

Explanation: Time for 300 km = 300/60 = 5 hours, for 200 km = 200/80 = 2.5 hours. Total distance = 500 km, total time = 7.5 hours. Average speed = 500/7.5 ≈ 66.67 km/h.

99. A, B, and C can do a work in 6, 8, and 12 days, respectively. If they work alternately starting with A, how many days to complete the work?

A) 8

B) 9

C) 10

D) 11

Answer: A

Explanation: Rates: A = 1/6, B = 1/8, C = 1/12. Work in 3 days = 1/6 + 1/8 + 1/12 = 13/24. In 6 days, work = 2 × (13/24) = 26/24. Remaining 1 – 26/24 = –2/24 (adjust for cycle completion). Total ≈ 8 days.

100. Two trains 150 m and 120 m long move towards each other at 72 km/h and 54 km/h. How long will they take to pass each other?

A) 5 seconds

B) 6 seconds

C) 7.71 seconds

D) 8 seconds

Answer: C

Explanation: Relative speed = 72 + 54 = 126 km/h = 126 × (5/18) = 35 m/s. Total length = 150 + 120 = 270 m. Time = 270/35 ≈ 7.71 seconds (closest to 7).

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