SSC GD Constable Exam: Time and Distance MCQ Set

Instructions:
- This practice set contains 100 multiple-choice questions (MCQs) on Time and Distance, designed for SSC GD preparation.
- Questions are divided into: 20% Low (Q1–20), 60% Medium (Q21–80), and 20% High (Q81–100) difficulty levels.
- 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 cover key topics from the SSC GD Mathematics syllabus, including speed, time, distance, relative speed, average speed, trains, and boats.
- Answers are provided with concise explanations for clarity. Use 1 km/h = 5/18 m/s for conversions unless specified otherwise.

Section 1: Low Difficulty - Basic Speed, Time, and Distance Calculations (Questions 1–20)

1. A car travels 120 km in 2 hours. What is its speed in km/h?
   A) 60 km/h
   B) 70 km/h
   C) 80 km/h
   D) 90 km/h
   Answer: A
   Explanation: Speed = Distance / Time = 120 km / 2 h = 60 km/h.

2. A man travels at a speed of 20 km/h for 3 hours. What is the distance covered?
   A) 60 km
   B) 70 km
   C) 80 km
   D) 90 km
   Answer: A
   Explanation: Distance = Speed × Time = 20 km/h × 3 h = 60 km.

3. A train covers 180 km at a speed of 45 km/h. How much time does it take?
A) 4 hours
B) 5 hours
C) 6 hours
D) 7 hours
Answer: A
Explanation: Time = Distance / Speed = 180 km / 45 km/h = 4 hours.

4. A cyclist travels 15 km in 30 minutes. What is his speed in km/h?
A) 35 km/h
B) 30 km/h
C) 40 km/h
D) 45 km/h
Answer: B
Explanation: Time = 30 min = 0.5 h. Speed = Distance / Time = 15 km / 0.5 h = 30 km/h.

5. A bus travels at 60 km/h. How far will it travel in 4 hours?
A) 250 km
B) 240 km
C) 260 km
D) 270 km
Answer: B
Explanation: Distance = Speed × Time = 60 km/h × 4 h = 240 km.

6. A man covers 100 km in 5 hours. What is his speed in km/h?
A) 30 km/h
B) 25 km/h
C) 20 km/h
D) 35 km/h
Answer: C
Explanation: Speed = Distance / Time = 100 km / 5 h = 20 km/h.

7. A car travels 200 km at 50 km/h. How long does it take?
   A) 6 hours
   B) 5 hours
   C) 4 hours
   D) 7 hours
   Answer: C
   Explanation: Time = Distance / Speed = 200 km / 50 km/h = 4 hours.

8. A person cycles 24 km in 2 hours. What is the speed in km/h?
   A) 18 km/h
   B) 14 km/h
   C) 16 km/h
   D) 12 km/h
   Answer: D
   Explanation: Speed = Distance / Time = 24 km / 2 h = 12 km/h.

9. A train travels at 72 km/h. How far will it travel in 3 hours?
   A) 246 km
   B) 226 km
   C) 236 km
   D) 216 km
   Answer: D
   Explanation: Distance = Speed × Time = 72 km/h × 3 h = 216 km.

10. A bus covers 150 km in 3 hours. What is its speed in km/h?
    A) 65 km/h
    B) 55 km/h
    C) 60 km/h
    D) 50 km/h
    Answer: D
    Explanation: Speed = Distance / Time = 150 km / 3 h = 50 km/h.

11. A car travels 80 km in 2 hours. What is its speed in km/h?
    A) 40 km/h
    B) 45 km/h

C) 50 km/h
D) 55 km/h
Answer: A
Explanation: Speed = Distance / Time = 80 km / 2 h = 40 km/h.

12. A man travels at 15 km/h for 4 hours. What is the distance covered?
A) 60 km
B) 65 km
C) 70 km
D) 75 km
Answer: A
Explanation: Distance = Speed × Time = 15 km/h × 4 h = 60 km.

13. A train covers 240 km at 60 km/h. How much time does it take?
A) 6 hours
B) 5 hours
C) 4 hours
D) 7 hours
Answer: C
Explanation: Time = Distance / Speed = 240 km / 60 km/h = 4 hours.

14. A cyclist travels 18 km in 45 minutes. What is his speed in km/h?
A) 24 km/h
B) 26 km/h
C) 28 km/h
D) 30 km/h
Answer: A
Explanation: Time = 45 min = 0.75 h. Speed = Distance / Time = 18 km / 0.75 h = 24 km/h.

15. A bus travels at 80 km/h. How far will it travel in 3 hours?
A) 240 km
B) 250 km
C) 260 km
D) 270 km

Answer: A
Explanation: Distance = Speed × Time = 80 km/h × 3 h = 240 km.

16. A man covers 120 km in 4 hours. What is his speed in km/h?
A) 30 km/h
B) 35 km/h
C) 40 km/h
D) 45 km/h
Answer: A
Explanation: Speed = Distance / Time = 120 km / 4 h = 30 km/h.

17. A car travels 150 km at 75 km/h. How long does it take?
A) 2 hours
B) 3 hours
C) 4 hours
D) 5 hours
Answer: A
Explanation: Time = Distance / Speed = 150 km / 75 km/h = 2 hours.

18. A person cycles 30 km in 2.5 hours. What is the speed in km/h?
A) 12 km/h
B) 14 km/h
C) 16 km/h
D) 18 km/h
Answer: A
Explanation: Speed = Distance / Time = 30 km / 2.5 h = 12 km/h.

19. A train travels at 90 km/h. How far will it travel in 2 hours?
A) 180 km
B) 190 km
C) 200 km
D) 210 km
Answer: A
Explanation: Distance = Speed × Time = 90 km/h × 2 h = 180 km.

20. A bus covers 200 km in 4 hours. What is its speed in km/h?
A) 55 km/h
B) 50 km/h
C) 60 km/h
D) 65 km/h
Answer: B
Explanation: Speed = Distance / Time = 200 km / 4 h = 50 km/h.

Section 2: Medium Difficulty - Relative Speed, Average Speed, Trains, and Boats (Questions 21–80)

21. A car travels 200 km at 50 km/h and 150 km at 75 km/h. What is the average speed?
A) 58.90 km/h
B) 55.33 km/h
C) 55.90 km/h
D) 58.33 km/h
Answer: D
Explanation: Time_1 = 200/50 = 4 h, Time_2 = 150/75 = 2 h. Total distance = 200 + 150 = 350 km, Total time = 4 + 2 = 6 h. Average speed = 350/6 = 58.33 km/h

22. Two trains of lengths 100 m and 150 m pass each other in 10 seconds moving in opposite directions at 36 km/h and 54 km/h. What is the relative speed in m/s?
A) 25 m/s
B) 26 m/s
C) 27 m/s
D) 28 m/s
Answer: A
Explanation: Relative speed = (36 + 54) km/h = 90 km/h = 90 × 5/18 = 25 m/s.

23. A man walks at 5 km/h for 2 hours and cycles at 15 km/h for 2 hours. What is his average speed?

A) 10 km/h
B) 11 km/h
C) 12 km/h
D) 13 km/h
Answer: A
Explanation: $\text{Distance}_1 = 5 \times 2 = 10$ km, $\text{Distance}_2 = 15 \times 2 = 30$ km. Total distance = 40 km, Total time = 4 h. Average speed = 40/4 = 10 km/h.

24. A train 200 m long crosses a pole in 10 seconds. What is its speed in km/h?
A) 72 km/h
B) 74 km/h
C) 76 km/h
D) 78 km/h
Answer: A
Explanation: Speed = Distance / Time = 200 m / 10 s = 20 m/s = 20 × 18/5 = 72 km/h.

25. A boat travels 24 km downstream in 2 hours. If the speed of the stream is 2 km/h, what is the speed of the boat in still water?
A) 8 km/h
B) 11 km/h
C) 10 km/h
D) 13 km/h
Answer: C
Explanation: Downstream speed = 24/2 = 12 km/h. Downstream speed = Boat speed + Stream speed, so Boat speed = 12 - 2 = 10 km/h.

26. Two cars approach each other at 40 km/h and 60 km/h. If they are 200 km apart, how long will they meet?
A) 1 hour
B) 3 hours
C) 2 hours
D) 5 hours
Answer: C

Explanation: Relative speed = 40 + 60 = 100 km/h. Time to meet = Distance / Relative speed = 200/100 = 2 hours.

27. A train 250 m long crosses a platform 350 m long in 20 seconds. What is its speed in km/h?

A) 100 km/h
B) 106 km/h
C) 110 km/h
D) 108 km/h
Answer: D
Explanation: Total distance = 250 + 350 = 600 m. Speed = 600/20 = 30 m/s = 30 × 18/5 = 108 km/h.

28. A man travels 60 km at 20 km/h and returns at 30 km/h. What is his average speed?

A) 25 km/h
B) 24 km/h
C) 26 km/h
D) 27 km/h
Answer: B
Explanation: Time_1 = 60/20 = 3 h, Time_2 = 60/30 = 2 h. Total distance = 120 km, Total time = 5 h. Average speed = 120/5 = 24 km/h.

29. A boat travels 36 km upstream in 3 hours. If the stream speed is 3 km/h, what is the boat's speed in still water?

A) 15 km/h
B) 10 km/h
C) 11 km/h
D) 12 km/h
Answer: A
Explanation: Upstream speed = 36/3 = 12 km/h. Upstream speed = Boat speed - Stream speed, so Boat speed = 12 + 3 = 15 km/h

30. A train 100 m long crosses a pole in 10 seconds. What is its speed in km/h?

A) 62 km/h
B) 63 km/h
C) 36 km/h
D) 78 km/h
Answer: C
Explanation: Speed = Distance / Time = 100 m / 10 s = 10 m/s = 10 × 18/5 = 36 km/h.

31. A car travels 120 km at 40 km/h and 80 km at 80 km/h. What is the average speed?
A) 48 km/h
B) 50 km/h
C) 52 km/h
D) 54 km/h
Answer: B
Explanation: $Time_1$ = 120/40 = 3 h, $Time_2$ = 80/80 = 1 h. Total distance = 200 km, Total time = 4 h. Average speed = 200/4 = 50 km/h

32. Two trains 120 m and 180 m long pass each other in 12 seconds moving in opposite directions at 54 km/h and 36 km/h. What is the relative speed in m/s?
A) 25 m/s
B) 26 m/s
C) 27 m/s
D) 28 m/s
Answer: A
Explanation: Relative speed = (54 + 36) km/h = 90 km/h = 90 × 5/18 = 25 m/s.

33. A man walks at 4 km/h for 3 hours and cycles at 12 km/h for 2 hours. What is his average speed?
A) 7.2 km/h
B) 7.4 km/h
C) 7.6 km/h
D) 7.8 km/h

Answer: A

Explanation: $\text{Distance}_1 = 4 \times 3 = 12$ km, $\text{Distance}_2 = 12 \times 2 = 24$ km. Total distance = 36 km, Total time = 5 h. Average speed = 36/5 = 7.2 km/h.

34. A train 200 m long crosses a platform 300 m long in 25 seconds. What is its speed in m/s?

A) 72 m/s

B) 20 km/h

C) 20 m/h

D) 20 m/s

Answer: D

Explanation: Total distance = 200 + 300 = 500 m. Speed = 500/25 = 20 m/s

35. A boat travels 48 km downstream in 4 hours. If the stream speed is 2 km/h, what is the boat's speed in still water?

A) 10 km/h

B) 11 km/h

C) 12 km/h

D) 13 km/h

Answer: A

Explanation: Downstream speed = 48/4 = 12 km/h. Boat speed = 12 - 2 = 10 km/h.

36. Two cars approach each other at 50 km/h and 70 km/h. If they are 240 km apart, how long will they meet?

A) 5 hours

B) 3 hours

C) 4 hours

D) 2 hours

Answer: D

Explanation: Relative speed = 50 + 70 = 120 km/h. Time = 240/120 = 2 hours.

37. A train 150 m long crosses a pole in 6 seconds. What is its speed in km/h?

A) 90 km/h

B) 92 km/h

C) 94 km/h

D) 96 km/h

Answer: A

Explanation: Speed = 150/6 = 25 m/s = 25 × 18/5 = 90 km/h.

38. A man travels 80 km at 40 km/h and returns at 20 km/h. What is his average speed?

A) 26.67 km/h

B) 27.67 km/h

C) 28.67 km/h

D) 29.67 km/h

Answer: A

Explanation: Time_1 = 80/40 = 2 h, Time_2 = 80/20 = 4 h. Total distance = 160 km, Total time = 6 h. Average speed = 160/6 = 26.67 km/h.

39. A boat travels 30 km upstream in 5 hours. If the stream speed is 2 km/h, what is the boat's speed in still water?

A) 8 km/h

B) 9 km/h

C) 10 km/h

D) 11 km/h

Answer: A

Explanation: Upstream speed = 30/5 = 6 km/h. Boat speed = 6 + 2 = 8 km/h.

40. A train 100 m long crosses a platform 200 m long in 15 seconds. What is its speed in km/h?

A) 72 km/h

B) 74 km/h

C) 76 km/h

D) 78 km/h

Answer: A

Explanation: Total distance = 100 + 200 = 300 m. Speed = 300/15 = 20 m/s = 20 × 18/5 = 72 km/h.

41. A car travels 150 km at 50 km/h and 100 km at 25 km/h. What is the average speed?

A) 35.2 km/h

B) 35.5 km/h

C) 35.7 km/h

D) 35.1 km/h

Answer: C

Explanation: $Time_1$ = 150/50 = 3 h, $Time_2$ = 100/25 = 4 h. Total distance = 250 km, Total time = 7 h. Average speed = 250/7 = 35.71 km/h

42. Two trains 150 m and 200 m long pass each other in 14 seconds moving in opposite directions at 72 km/h and 54 km/h. What is the relative speed in m/s?

A) 35 m/s

B) 36 m/s

C) 37 m/s

D) 38 m/s

Answer: A

Explanation: Relative speed = (72 + 54) km/h = 126 km/h = 126 × 5/18 = 35 m/s.

43. A man walks at 6 km/h for 2 hours and cycles at 18 km/h for 3 hours. What is his average speed?

A) 13.0 km/h

B) 13.2 km/h

C) 14 km/h

D) 15 km/h

Answer: B

Explanation: $Distance_1$ = 6 × 2 = 12 km, $Distance_2$ = 18 × 3 = 54 km. Total distance = 66 km, Total time = 5 h. Average speed = 66/5 = 13.2 km/h

44. A train 200 m long crosses a platform 400 m long in 40 seconds. What is its speed in km/h?

A) 72 km/h

B) 54 km/h

C) 66 km/h

D) 78 km/h

Answer: B

Explanation: Total distance = 200 + 400 = 600 m. Speed = 600/40 = 15 m/s = 15 × 18/5 = 54 km/h.

45. A boat travels 40 km downstream in 2 hours. If the stream speed is 5 km/h, what is the boat's speed in still water?

A) 15 km/h

B) 16 km/h

C) 17 km/h

D) 18 km/h

Answer: A

Explanation: Downstream speed = 40/2 = 20 km/h. Boat speed = 20 - 5 = 15 km/h.

46. Two cars approach each other at 60 km/h and 80 km/h. If they are 280 km apart, how long will they meet?

A) 2 hours

B) 3 hours

C) 4 hours

D) 5 hours

Answer: A

Explanation: Relative speed = 60 + 80 = 140 km/h. Time = 280/140 = 2 hours.

47. A train 120 m long crosses a pole in 4 seconds. What is its speed in km/h?

A) 120 km/h

B) 110 km/h

C) 108 km/h
D) 114 km/h
Answer: C
Explanation: Speed = 120/4 = 30 m/s = 30 × 18/5 = 108 km/h.

48. A man travels 100 km at 50 km/h and returns at 25 km/h. What is his average speed?
A) 31.33 km/h
B) 34.33 km/h
C) 33.33 km/h
D) 36.33 km/h
Answer: C
Explanation: Time_1 = 100/50 = 2 h, Time_2 = 100/25 = 4 h. Total distance = 200 km, Total time = 6 h. Average speed = 200/6 = 33.33 km/h.

49. A boat travels 36 km upstream in 4 hours. If the stream speed is 3 km/h, what is the boat's speed in still water?
A) 12 km/h
B) 13 km/h
C) 14 km/h
D) 15 km/h
Answer: A
Explanation: Upstream speed = 36/4 = 9 km/h. Boat speed = 9 + 3 = 12 km/h.

50. A train 150 m long crosses a platform 250 m long in 20 seconds. What is its speed in m/s?
A) 72 km/h
B) 20 km/h
C) 80 km/h
D) 20 m/s
Answer: D
Explanation: Total distance = 150 + 250 = 400 m. Speed = 400/20 = 20 m/s

51. A car travels 180 km at 60 km/h and 120 km at 40 km/h. What is the average speed?

A) 50 km/h

B) 51 km/h

C) 52 km/h

D) 53 km/h

Answer: A

Explanation: $\text{Time}_1 = 180/60 = 3$ h, $\text{Time}_2 = 120/40 = 3$ h. Total distance = 300 km, Total time = 6 h. Average speed = 300/6 = 50 km/h.

52. Two trains 100 m and 150 m long pass each other in 10 seconds moving in opposite directions at 54 km/h and 36 km/h. What is the relative speed in m/s?

A) 25 m/s

B) 26 m/s

C) 27 m/s

D) 28 m/s

Answer: A

Explanation: Relative speed = (54 + 36) km/h = 90 km/h = 90 × 5/18 = 25 m/s.

53. A man walks at 5 km/h for 4 hours and cycles at 15 km/h for 2 hours. What is his average speed?

A) 8.33 km/h

B) 8.5 km/h

C) 8.67 km/h

D) 8.83 km/h

Answer: A

Explanation: $\text{Distance}_1 = 5 \times 4 = 20$ km, $\text{Distance}_2 = 15 \times 2 = 30$ km. Total distance = 50 km, Total time = 6 h. Average speed = 50/6 = 8.33 km/h.

54. A train 200 m long crosses a platform 300 m long in 25 seconds. What is its speed in km/h?

A) 72 km/h

B) 74 km/h
C) 76 km/h
D) 78 km/h
Answer: A
Explanation: Total distance = 200 + 300 = 500 m. Speed = 500/25 = 20 m/s = 20 × 18/5 = 72 km/h.

55. A boat travels 48 km downstream in 3 hours. If the stream speed is 4 km/h, what is the boat's speed in still water?
A) 11 km/h
B) 13 km/h
C) 14 km/h
D) 12 km/h
Answer: D
Explanation: Downstream speed = 48/3 = 16 km/h. Boat speed = 16 - 4 = 12 km/h.

56. Two cars approach each other at 40 km/h and 60 km/h. If they are 200 km apart, how long will they meet?
A) 5 hours
B) 3 hours
C) 4 hours
D) 2 hours
Answer: D
Explanation: Relative speed = 40 + 60 = 100 km/h. Time = 200/100 = 2 hours.

57. A train 100 m long crosses a pole in 5 seconds. What is its speed in km/h?
A) 72 km/h
B) 74 km/h
C) 76 km/h
D) 78 km/h
Answer: A
Explanation: Speed = 100/5 = 20 m/s = 20 × 18/5 = 72 km/h.

58. A man travels 120 km at 60 km/h and returns at 40 km/h. What is his average speed?

A) 49 km/h

B) 48 km/h

C) 50 km/h

D) 51 km/h

Answer: B

Explanation: Time_1 = 120/60 = 2 h, Time_2 = 120/40 = 3 h. Total distance = 240 km, Total time = 5 h. Average speed = 240/5 = 48 km/h.

59. A boat travels 40 km upstream in 5 hours. If the stream speed is 2 km/h, what is the boat's speed in still water?

A) 12 km/h

B) 11 km/h

C) 10 km/h

D) 13 km/h

Answer: C

Explanation: Upstream speed = 40/5 = 8 km/h. Boat speed = 8 + 2 = 10 km/h.

60. A train 150 m long crosses a platform 250 m long in 20 seconds. What is its speed in km/h?

A) 72 km/h

B) 74 km/h

C) 76 km/h

D) 78 km/h

Answer: A

Explanation: Total distance = 150 + 250 = 400 m. Speed = 400/20 = 20 m/s = 20 × 18/5 = 72 km/h.

61. A car travels 200 km at 80 km/h and 100 km at 40 km/h. What is the average speed in m/s?

A) 60 m/s

B) 61 m/s

C) 50 m/s
D) 50/3 m/s
Answer:
Explanation: Time_1 = 200/80 = 2.5 h, Time_2 = 100/40 = 2.5 h. Total distance = 300 km, Total time = 5 h. Average speed = 300/5 = 60 km/h. 60 x 5/18 = 50/3 m/s

62. Two trains 120 m and 180 m long pass each other in 15 seconds moving in opposite directions at 72 km/h and 54 km/h. What is the relative speed in m/s?
A) 35 m/s
B) 36 m/s
C) 37 m/s
D) 38 m/s
Answer: A
Explanation: Relative speed = (72 + 54) km/h = 126 km/h = 126 × 5/18 = 35 m/s.

63. A man walks at 4 km/h for 5 hours and cycles at 16 km/h for 2 hours. What is his average speed?
A) 7.43 km/h
B) 7.53 km/h
C) 7.63 km/h
D) 7.73 km/h
Answer: A
Explanation: Distance_1 = 4 × 5 = 20 km, Distance_2 = 16 × 2 = 32 km. Total distance = 52 km, Total time = 7 h. Average speed = 52/7 ≈ 7.43 km/h.

64. A train 200 m long crosses a platform 400 m long in 30 seconds. What is its speed in km/h?
A) 72 km/h
B) 74 km/h
C) 76 km/h
D) 78 km/h

Answer: A

Explanation: Total distance = 200 + 400 = 600 m. Speed = 600/30 = 20 m/s = 20 × 18/5 = 72 km/h.

65. A boat travels 36 km downstream in 2 hours. If the stream speed is 3 km/h, what is the boat's speed in still water?

A) 15 km/h

B) 16 km/h

C) 17 km/h

D) 18 km/h

Answer: A

Explanation: Downstream speed = 36/2 = 18 km/h. Boat speed = 18 - 3 = 15 km/h.

66. Two cars approach each other at 50 km/h and 70 km/h. If they are 480 km apart, how long will they meet?

A) 2 hours

B) 3 hours

C) 4 hours

D) 5 hours

Answer: C

Explanation: Relative speed = 50 + 70 = 120 km/h. Time = 480/120 = 4 hours.

67. A train 100 m long crosses a pole in 2 seconds. What is its speed in km/h?

A) 90 km/h

B) 110 km/h

C) 94 km/h

D) 180 km/h

Answer: D

Explanation: Speed = 100/2 = 50 m/s = 50 × 18/5 = 180 km/h.

68. A man travels 150 km at 75 km/h and returns at 50 km/h. What is his average speed?

A) 50/3 km/h
B) 50 m/s
C) 50/3 m/s
D) 63 km/h
Answer: C
Explanation: $Time_1$ = 150/75 = 2 h, $Time_2$ = 150/50 = 3 h. Total distance = 300 km, Total time = 5 h. Average speed = 300/5 = 60 km/h. = 60 x 5/18 = 50/3 m/s

69. A boat travels 54 km upstream in 6 hours. If the stream speed is 2 km/h, what is the boat's speed in still water?
A) 10 km/h
B) 11 km/h
C) 12 km/h
D) 13 km/h
Answer: B
Explanation: Upstream speed = 54/6 = 9 km/h. Boat speed = 9 + 2 = 11 km/h.

70. A train 150 m long crosses a platform 550 m long in 20 seconds. What is its speed in km/h?
A) 120 km/h
B) 122 km/h
C) 124 km/h
D) 126 km/h
Answer: D
Explanation: Total distance = 150 + 550 = 700 m. Speed = 700/20 = 35 m/s = 35 × 18/5 = 126 km/h.

71. A car travels 200 km at 80 km/h and 100 km at 40 km/h. What is the average speed?
A) 60 km/h
B) 61 km/h
C) 62 km/h
D) 63 km/h

Answer: A

Explanation: Time_1 = 200/80 = 2.5 h, Time_2 = 100/40 = 2.5 h. Total distance = 300 km, Total time = 5 h. Average speed = 300/5 = 60 km/h.

72. Two trains 120 m and 180 m long pass each other in 15 seconds moving in opposite directions at 80 km/h and 64 km/h. What is the relative speed in m/s?

A) 35 m/s

B) 40 m/s

C) 37 m/s

D) 38 m/s

Answer: B

Explanation: Relative speed = (82 + 64) km/h = 144 km/h = 144 × 5/18 = 40 m/s.

73. A man walks at 4 km/h for 5 hours and cycles at 16 km/h for 2 hours. What is his average speed in m/s?

A) 7.42 km/h

B) 2.06 km/h

C) 7.63 m/s

D) 2.06 m/s

Answer: D

Explanation: Distance_1 = 4 × 5 = 20 km, Distance_2 = 16 × 2 = 32 km. Total distance = 52 km, Total time = 7 h. Average speed = 52/7 ≈ 7.42 km/h. => 7.42 x 5/18 ≈ 2.0635 m/s

74. A train 150 m long crosses a platform 600 m long in 30 seconds. What is its speed in km/h?

A) 72 km/h

B) 74 km/h

C) 76 km/h

D) 90 km/h

Answer: D

Explanation: Total distance = 150 + 600 = 750 m. Speed = 750/30 = 25 m/s = 25 × 18/5 = 90 km/h.

75. A boat travels 36 km downstream in 2 hours. If the stream speed is 3 km/h, what is the boat's speed in still water in m/s?

A) 25/3 m/s

B) 25/8 m/s

C) 25/6 m/s

D) 25/2 m/s

Answer: C

Explanation: Downstream speed = 36/2 = 18 km/h. Boat speed = 18 - 3 = 15 km/h = 15 x 5/18 = 25/6 m/s

76. Two cars approach each other at 50 km/h and 70 km/h. If they are 240 km apart, how long will they meet?

A) 2 hours

B) 3 hours

C) 4 hours

D) 5 hours

Answer: A

Explanation: Relative speed = 50 + 70 = 120 km/h. Time = 240/120 = 2 hours.

77. A train 100 m long crosses a pole in 4 seconds. What is its speed in km/h?

A) 90 km/h

B) 92 km/h

C) 94 km/h

D) 96 km/h

Answer: A

Explanation: Speed = 100/4 = 25 m/s = 25 × 18/5 = 90 km/h.

78. A man travels 150 km at 75 km/h and returns at 25 km/h. What is his average speed?

A) 37.9 km/h

B) 31 km/h

C) 37.5 km/h

D) 37 km/h

Answer: C

Explanation: Time_1 = 150/75 = 2 h, Time_2 = 150/25 = 6 h. Total distance = 300 km, Total time = 8 h. Average speed = 300/8 = 37.5 km/h.

79. A boat travels 48 km upstream in 6 hours. If the stream speed is 2 km/h, what is the boat's speed in still water?

A) 10 km/h

B) 11 km/h

C) 12 km/h

D) 13 km/h

Answer: A

Explanation: Upstream speed = 48/6 = 8 km/h. Boat speed = 8 + 2 = 10 km/h.

80. A train 150 m long crosses a platform 350 m long in 20 seconds. What is its speed in km/h?

A) 90 km/h

B) 92 km/h

C) 94 km/h

D) 96 km/h

Answer: A

Explanation: Total distance = 150 + 350 = 500 m. Speed = 500/20 = 25 m/s = 25 × 18/5 = 90 km/h.

Section 3: High Difficulty - Complex Problems with Multiple Conditions (Questions 81–100)

81. A man travels 60 km at 30 km/h and then increases his speed to 40 km/h for the next 80 km. What is his average speed?

A) 34.29 km/h

B) 35 km/h

C) 36 km/h

D) 37.29 km/h

Answer: B

Explanation: $Time_1$ = 60/30 = 2 h, $Time_2$ = 80/40 = 2 h. Total distance = 140 km, Total time = 4 h. Average speed = 140/4 = 35 km/h

82. Two trains 100 m and 150 m long are moving in the same direction at 54 km/h and 36 km/h. How long will they take to pass each other?

A) 51 seconds

B) 56 seconds

C) 50 seconds

D) 52 seconds

Answer: C

Explanation: Relative speed = |54 - 36| = 18 km/h = 18 × 5/18 = 5 m/s. Total distance = 100 + 150 = 250 m. Time = 250/5 = 50 seconds

83. A boat travels 60 km downstream in 3 hours and upstream in 5 hours. What is the speed of the stream?

A) 3 km/h

B) 4 km/h

C) 5 km/h

D) 6 km/h

Answer: B

Explanation: Downstream speed = 60/3 = 20 km/h, Upstream speed = 60/5 = 12 km/h. Stream speed = (Downstream - Upstream)/2 = (20 - 12)/2 = 4 km/h

84. A train 200 m long crosses a man running at 6 km/h in the same direction in 20 seconds. What is the train’s speed in km/h?

A) 36 km/h

B) 38 km/h

C) 40 km/h

D) 42 km/h

Answer: D

Explanation: Relative speed = 200/20 = 10 m/s. Man’s speed = 6 km/h = 6 × 5/18 = 5/3 m/s. Train speed = 10 + 5/3 = 35/3 m/s = 35/3 × 18/5 = 42 km/h

85. A car covers a distance at 60 km/h and returns at 80 km/h, taking 7 hours for the round trip. What is the distance one way?

A) 240 km

B) 250 km

C) 260 km

D) 270 km

Answer: A

Explanation: Let distance = D km. $Time_1$ = D/60, $Time_2$ = D/80. Total time = D/60 + D/80 = 7, 4D/240 + 3D/240 = 7, 7D/240 = 7, D = 240 km.

86. Two trains 250 m and 300 m long move in opposite directions at 72 km/h and 54 km/h. How long will they take to pass each other?

A) 10.7 seconds

B) 11.7 seconds

C) 15.7 seconds

D) 13 seconds

Answer: C

Explanation: Relative speed = (72 + 54) = 126 km/h = 126 × 5/18 = 35 m/s. Total distance = 250 + 300 = 550 m. Time = 550/35 = 15.71 seconds.

87. A man cycles 20 km at 10 km/h and walks 10 km at 5 km/h. What is his average speed?

A) 8 km/h

B) 8.5 km/h

C) 9 km/h

D) 7.5 km/h

Answer: D

Explanation: $Time_1$ = 20/10 = 2 h, $Time_2$ = 10/5 = 2 h. Total distance = 30 km, Total time = 4 h. Average speed = 30/4 = 7.5 km/h

88. A train 100 m long crosses a platform 200 m long in 30 seconds. If it crosses a pole in 10 seconds, what is its speed in km/h?

A) 72 km/h

B) 34 km/h

C) 36 km/h

D) 78 km/h

Answer: C

Explanation: Speed = 100/10 = 10 m/s (pole crossing). For platform, total distance = 100 + 200 = 300 m, Speed = 300/30 = 10 m/s = 10 × 18/5 = 36 km/h.

89. A boat travels 48 km downstream in 3 hours and 32 km upstream in 4 hours. What is the boat's speed in still water?

A) 10 km/h

B) 11 km/h

C) 12 km/h

D) 13 km/h

Answer: C

Explanation: Downstream speed = 48/3 = 16 km/h, Upstream speed = 32/4 = 8 km/h. Boat speed = (16 + 8)/2 = 12 km/h.

90. A car travels a certain distance at 40 km/h and returns at 60 km/h, taking 5 hours for the round trip. What is the distance one way in meter?

A) 120 km

B) 1200 m

C) 12000 m

D) 120000 m

Answer: D

Explanation: Let distance = D km. Time = D/40 + D/60 = 5, 3D/120 + 2D/120 = 5, 5D/120 = 5, D = 120 km.= 120 x 1000 = 120000

91. Two trains 130 m and 180 m long move in the same direction at 72 km/h and 54 km/h. How long will they take to pass each other?

A) 60 seconds

B) 52 seconds

C) 62 seconds

D) 56 seconds

Answer: C

Explanation: Relative speed = |72 - 54| = 18 km/h = 18 × 5/18 = 5 m/s. Total distance = 130 + 180 = 310 m. Time = 310/5 = 62

92. A boat travels 60 km downstream in 3 hours and upstream in 6 hours. What is the speed of the stream?

A) 4 km/h

B) 5 km/h

C) 6 km/h

D) 7 km/h

Answer: B

Explanation: Downstream speed = 60/3 = 20 km/h, Upstream speed = 60/6 = 10 km/h. Stream speed = (20 - 10)/2 = 5 km/h.

93. A train 200 m long crosses a man running at 9 km/h in the same direction in 24 seconds. What is the train's speed in km/h?

A) 36 km/h

B) 38 km/h

C) 39 km/h

D) 42 km/h

Answer: C

Explanation: Relative speed = 200/24 ≈ 8.33 m/s. Man's speed = 9 km/h = 9 × 5/18 = 2.5 m/s. Train speed = 8.33 + 2.5 = 10.83 m/s ≈ 39 km/h

94. A car travels 100 km at 50 km/h and then 150 km at 75 km/h. What is its average speed?

A) 60 km/h

B) 61 km/h

C) 62.5 km/h

D) 63 km/h

Answer: C

Explanation: Time_1 = 100/50 = 2 h, Time_2 = 150/75 = 2 h. Total distance = 250 km, Total time = 4 h. Average speed = 250/4 = 62.5 km/h

95. Two trains 150 m and 200 m long move in opposite directions at 72 km/h and 54 km/h. How long will they take to pass each other?

A) 10 seconds

B) 11 seconds

C) 12 seconds
D) 13 seconds
Answer: A
Explanation: Relative speed = (72 + 54) = 126 km/h = 126 × 5/18 = 35 m/s. Total distance = 150 + 200 = 350 m. Time = 350/35 = 10 seconds.

96. A man cycles 30 km at 15 km/h and walks 10 km at 5 km/h. What is his average speed?
A) 10 km/h
B) 11 km/h
C) 12 km/h
D) 13 km/h
Answer: A
Explanation: Time_1 = 30/15 = 2 h, Time_2 = 10/5 = 2 h. Total distance = 40 km, Total time = 4 h. Average speed = 40/4 = 10 km/h.

97. A train 100 m long crosses a platform 200 m long in 15 seconds. If it crosses a pole in 5 seconds, what is its speed in km/h?
A) 78 km/h
B) 74 km/h
C) 76 km/h
D) 72 km/h
Answer: D
Explanation: Speed = 100/5 = 20 m/s (pole crossing). For platform, total distance = 100 + 200 = 300 m, Speed = 300/15 = 20 m/s = 20 × 18/5 = 72 km/h.

98. A boat travels 48 km downstream in 4 hours and 32 km upstream in 4 hours. What is the boat's speed in still water?
A) 10 km/h
B) 11 km/h
C) 12 km/h
D) 13 km/h
Answer: A

Explanation: Downstream speed = 48/4 = 12 km/h, Upstream speed = 32/4 = 8 km/h. Boat speed = (12 + 8)/2 = 10 km/h.

99. A car travels a certain distance at 40 km/h and returns at 60 km/h, taking 5 hours for the round trip. What is the distance one way?
A) 120 km
B) 122 km
C) 124 km
D) 126 km
Answer: A
Explanation: Let distance = D km. Time = D/40 + D/60 = 5, 5D/120 = 5, D = 120 km.

100. Two trains 120 m and 180 m long move in the same direction at 72 km/h and 54 km/h. How long will they take to pass each other?
A) 50 seconds
B) 52 seconds
C) 54 seconds
D) 60 seconds
Answer: D
Explanation: Relative speed = |72 - 54| = 18 km/h = 18 × 5/18 = 5 m/s. Total distance = 120 + 180 = 300 m. Time = 300/5 = 60 seconds

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