Problems on Trains for Railway Exams

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1) Two trains are running towards each other at the speed of 36 kmph and 54 kmph crosses each other in 20 seconds. If the length of first train is 50% more than that of second trains then find the length of faster train?

a) 400m

b) 300m

c) 100m

d) 200m

2) Two trains are running towards each other at the speed of 20 mps and 15 mps crosses each other in 1/2 minutes. If the length of first train is 150% that of second train then find the length of shorter train?

a) 420m

b) 210m

c) 350m

d) 490m

3) Two trains are running towards each other at the speed of 36 kmph and 14 mps crosses each other in 15 seconds. If the length of first train to that of second train is in the ratio of 3 : 1 then find the length of slower train?

a) 90 m

b) 270 m

c) 180 m

d) None of these

4) Train A, crosses a platform of length 200 m in 20 seconds after some time it crosses another train B of same length in 10 seconds from opposite direction. If the speed of Train B is 36 kmph then find the length of train A?

a) 400/3 m.

b) 100/3 m.

c) 200/3 m.

d) 100 m.

5) Train A , crosses a bridge of length 250m in 15 seconds after some time it crosses another train B of same length in 10 seconds in same direction. If the speed of Train B is 10m/s then find the Speed of train A?

a) 10 m/s

b) 20 m/s

c) 25 m/s

d) None of these

6) If a train crosses a platform double of its length in 30 seconds and after some time it again crosses a bridge double of platforms length in 20 seconds then find the speed of train?

a) 36 kmph

b) Cannot be determined

c) 18 kmph

d) 54 kmph

7) If a train crosses a bridge equal of its length in 15 seconds and the length of train is 200 meters then find the speed of train?

a) 96 kmph

b) 80 kmph

c) 108 kmph

d) None of these

8) If a train crosses a man standing on a platform in 10 seconds and the same platform of length 300m and in 25 seconds then find the length of train?

a) 250 m

b) 300 m

c) 100 m

d) 200 m

9) If a train crosses a bridge 87.5% of its length in 15 seconds and the length of the train in 160 m then finds the speed of train?

a) 72 kmph

b) 36 kmph

c) 54 kmph

d) 18 kmph

10) Two trains A and B travelling towards each other with the speed of 20 mps and 25mps crosses in 1/6 minutes. If the total length of the trains is (x) meters then find the total length of trains?

a) 450 m

b) 350 m

c) 250 m

d) 500 m

11) A train crosses a truck in opposite direction in 1/3 minutes. If the speed of truck was 54 kmph and train was moving with 15m/s find the length of train? Assume that the length of truck is negligible in front of train.

a) 60 m

b) 400 m

c) 500 m

d) 600 m

12) A train crosses a bus in opposite direction in 33 seconds. If the speed of bus was 36 kmph and train was moving with 15m/s find the length of train? Assume that the length of bus is 10% length of train.

a) 650 m

b) 750 m

c) 250 m

d) 500 m

13) If the ratio of speed of two trains is in the ratio of 5 : 4 and they crosses each other completely in 20 seconds in opposite direction. If the length of faster train is 200 meter and length of smaller train is 75% of faster train then find the speed of fastest train?

a) 8 mps

b) 8.72 mps

c) 9 mps

d) 9.72 mps

14) If the ratio of speed of two trains is in the ratio of 2 : 1 and they crosses each other completely in 4/5 minutes in same direction. If the length of faster train is 200 meter and length of slower train is 50% of faster train then find the speed of slower train?

a) 1.08 mp

b) 2 mps

c) 2.08 mps

d) 2.98 mps

15) Train A can travel with the speed of 45 kmph without stoppage and takes 6 hours to reach the destination but due to some technical work train takes several stoppage and reach destination 3 hours late. Find the reduced speed of the train?

a) 60 kmph

b) 30 kmph

c) 90 kmph

d) 75 kmph

16) Train is travelling with the speed of 36 kmph without stoppage and takes 5 hours to reach the destination but due to some water logging train takes several stoppage and reach destination 30 minutes late. Find the total stoppage taken by the train if each stop was of 2 minutes?

a) 14

b) 15

c) 30

d) 0

17) If the ratio of time taken by two trains to cover a certain distance is 5 : 3 then find their speed ratio to cover the same distance?

a) 5 : 3

b) 3 : 5

c) 4 : 5

d) Cannot be determined

18) If train A is travelling with 75% of the speed of train B and takes 2 hours more to cover a certain distance(D) then find the time taken by Train A to cover (D + 100) km distance?

a) 24.6 hours

b) 20 hours

c) 10.6 hours

d) Cannot be determined

19) If train A is travelling with 50% more than the speed of train B and takes 1 hours less to cover a certain distance then find the time taken by Train B to cover total distance(2D)?

a) 2 hours

b) 3 hours

c) 6 hours

d) Cannot be determined

20) If Train A and Train B is travelling with 30 kmph and 45 kmph respectively, A takes 1 hours more to cover a certain distance(D) then find the time taken by Train B to cover (2D + 20) km distance?

a) 10 hours

b) 200 hours

c) 300 hours

d) 100 hours

21) If the speed of Train is (x) kmph and it crosses a pole in 10 seconds and then a man walking with 5 mps speed towards it in 5 seconds then find the speed of train?

a) 18 kmph

b) 36 kmph

c) 54 kmph

d) 8 kmph

22) If the speed of Train is 36 kmph and it crosses a signal in 20 seconds and then a platform of length 200m in 40 seconds then find the length of train?

a) 150 m

b) 100 m

c) 200 m

d) None of these

23) Total distance cover by a train is 400 km. If a train covers 40% of distance in 5 hours , 60% of the distance in 8 hours , 50% of the distance in 2 hours and 25% of the distance in 1 hours then find the average speed of train?

a) 43.75 kmph

b) 44.75 kmph

c) 45.75 kmph

d) Cannot be determined

24) If Train A can cover 126 km in 8 hours while train B can cover 130 km in 12 hours then find the average speed of trains?

a) 12 kmph

b) 13.8 kmph

c) 12.8 kmph

d) 10.8 kmph

25) If Train A can cover 121 km in 5 hours , Train B can cover 111 km in 9 hours while train C can cover 139 km in 11 hours then find the average speed of trains?

a) 12.8 kmph

b) 14.8 kmph

c) 16.8 kmph

d) None of these

26) Train A crosses Train B coming from opposite direction in 20 seconds and takes 30 seconds when travelling in same direction. If the length of Train A and Train B is 200m and 300m then find the speed of train A?

a) 22.5 m/s

b) 12.5 m/s

c) 20.5 m/s

d) Cannot be determined

27) Train A completely crosses Train B travelling in same direction in 40 seconds and takes 10 seconds to cross each other. If the length of Train A & Train B is 250m & 350m then find the speed of train B?

a) 12.5 m/s

b) 32.5 m/s

c) 45.5 m/s

d) 22.5 m/s

Problems on Trains for Railway Exams

28) If train A can cover 100 km in 5 hours whose speed is 80% of the speed of Train B. Find the distance covered by Train B in one hour?

a) 16 kms

b) 26 kms

c) 36 kms

d) None of these

29) If the average speed of Train A and Train B is 25 kmph while train A can cover 100 km in 5 hours and Train B takes 8 hours to cover distance (D). Find the speed of Train B to cover (3D) distance?

a) 94.375 kmph

b) 80.375 kmph

c) 84.375 kmph

d) None of these

30) If the average speed of Train A and Train B is 32.5 kmph while train A can cover 150 km in 7 hours and Train B takes 9 hours to cover distance (D). Find the speed of Train B?

a) 41.1 kmph

b) 31.1 kmph

c) 51.1 kmph

d) Cannot be determined

31) A train having speed 900% to the time taken by it to cover a distance of 22500 meters then find the time taken by the same train to cover a distance of 360 km?

a) 46.67 minutes.

b) 36.67 minutes.

c) 16.67 minutes.

d) 13.33 minutes.

32) A train takes 10 seconds to cross a platform thrice of its length and 20 seconds to cross a bridge double of platforms length then find the speed of train?

a) 18 kmph

b) Cannot be determined

c) None of these

d) 20m/s

33) A train takes 20 seconds to cross a Bridge of 300m in length and 30 seconds to cross a platform double of train's length then find the speed of train?

a) 10 m/s

b) 30 m/s

c) 20 m/s

d) 40m/s

34) If a train crosses a pole in 1/10 minutes then find the speed of train if its length is 360 meters?

a) 216 kmph

b) 196 kmph

c) 80 kmph

d) None of these

35) If a train crosses a bridge double of its length in 30 seconds when travelling with 36kmph then find the time taken to cross the same bridge with 45kmph.

.

a) 24 sec

b) 25 sec

c) 20 sec

d) None of these

36) If a train crosses a platform equal of its length in 20 seconds when travelling with 18 kmph then find the time taken to cross the same platform with 36 kmph? Given : length of train = 200 m.

a) 15 sec

b) 20 sec

c) 10 sec

d) None of these

37) Train A, left Bhopal station at 7:30 PM towards Delhi with the speed of 60 kmph. Another Train B left Delhi station at 8:30 PM towards Bhopal with the speed of 75 kmph find the time when both the trains meet each other? Given that the distance between Bhopal to Delhi is 450km.

a) 3 hours

b) Cannot be determined

c) None of these

d) 3.77 hours

38) Train P, left Bhopal station at 8:00 AM towards Nagpur with the speed of 50 kmph. Another Train Q left Nagpur station at 8:30 PM towards Bhopal with the speed of 60 kmph find the time when both the trains meet each other? Given that the distance between Bhopal to Nagpur is 750km.

a) 5.54 hours

b) 6.54 hours

c) 4.54 hours

d) Cannot be determined

39) Train A, left Delhi station at 10:00 AM towards Mumbai with the speed of 50 kmph. Another Train B left Mumbai station at 10:30 AM towards Delhi with the speed of 30 kmph Both the trains meet each other after 4.25 hours then find distance between Delhi to Mumbai?

a) 355 kms

b) 375 kms

c) 380 kms

d) Cannot be determined

40) Train P, left Delhi station at 6:00 AM towards Bhopal with the speed of 50 kmph. Another Train Q left Bhopal station at 5:30 AM towards Delhi with the speed of 30 kmph both the trains meets each other after 3.5 hours then find distance between Delhi to Bhopal?

a) 280 kms

b) 265 kms

c) 250 kms

d) Cannot be determined

41) Find the length of the train if it crosses a bridge of length 200meter in 15 seconds and a pole in 10 seconds?

a) 400 m.

b) 200 m.

c) 100 m.

d) 250 m.

42) Find the time taken by Train A of length 150m to cross a man standing in train B of length 200m if the speed of Train A & Train B is 20m/s & 15m/s?

a) 20 Sec

b) 15 Sec

c) 30 Sec

d) 10 Sec

43) Find the time taken by a man to cross a train of length 150m standing at 750meter away from him if he is travelling with the speed of 5 m/s?

a) 80 sec.

b) 180 sec.

c) 280 sec.

d) None of these

44) Find the length of a bridge if a train crosses it in 20 seconds with the speed of 36kmph and the same train crosses a signal in 10 seconds?

a) 200 m.

b) 100 m.

c) 300 m.

d) 400 m.

45) Find the length of platform, if length of platform is 33(1/3)% of trains length and crosses platform with the speed of 20m/s in 40 seconds?

a) 100 m

b) 200 m

c) 150 m

d) 250 m

46) Find the length of river basin which is crossed by Amar express in 50 seconds when running with 36 kmph.length of Train is 150 meter?

a) 350 m

b) 300 m

c) 320 m

d) 400 m

47) A train takes 15 seconds to cross a signal and 20 seconds to cross a platform of length 250 meter then find the speed of train in kmph?

a) 160 kmph

b) 200 kmph

c) 180 kmph

d) None of these

48) Chennai express is travelling with a speed of 36 kmph to reach its destination in 6 hours but after reaching 16.6% of distance engine gets failed due to which train gets delayed by 35 minutes. Find by how much percent driver needs to increase trains speed to reach destination on time?

a) 13.19%

b) 23.19%

c) 16.19%

d) 11.19%

49) Vivek express is travelling with a speed of 20 m/s to reach its destination in 6 hours but after reaching 50% of distance engine gets failed due to which train gets delayed by 25 minutes. Find by how much percent driver needs to increase trains speed to reach destination on time?

a) 6.125%

b) 26.125%

c) 18.125%

d) 16.125%

50) Find the length of platform which is crossed by a train of 150m long with the speed of 36 kmph in 20 seconds?

a) 50 m.

b) 150 m.

c) 100 m.

d) 200 m.

ANSWERS

1) Answer: D

Solution:

According to the question,

Let length of Train A = 3x meter.

Length of Train B = 2x meter.

$(Speed_A + Speed_B)$ = (Length of Train A + Length of Train B)/Time .....(1)

(36 + 54)× 5/18 = (3x + 2x)/20

x = 100m

Length of faster train (B) = 100× 2 = 200m

2) Answer: A

Solution:

According to the question,

Let length of Train A = 3x meter

Length of Train B = 2x meter

$(S_A + S_B)$ = (Length of Train A + Length of Train B)/Time .....(1)

(20 + 15) = (3x + 2x)/ 30

x = 210m

Length of Shorter train (B) = 2x = 210 × 2 = 420m.

3) Answer: B

Solution:

According to the question,

Speed of train A = 36 kmph = 36×5/18 = 10 m/s

Speed of train B = 14 m/s

Let length of Train A = 3x meter

Length of Train B = 1x meter

$(S_A + S_B)$ = (Length of Train A + Length of Train B)/Time .....(1)

(10 + 14) = (3x + x)/ 15

x = 90 m

Length of Slower train (A) = 3x = 90× 3 = 270 m

4) Answer: A

Solution:

According to the question,

Speed of train B = 36 kmph = 36×5/18 = 10 m/s

Speed of train A = x m/s

Let length of Train A = Length of Train B = (L) meter

(S_A + S_B) = (Length of Train A + Length of Train B)/Time ……..(1)

(10 + x) = (L + L)/ 10

(10 + x) = (L)/ 5……(2)

Train A, crosses a platform of length 200 m in 20 seconds

x = (L + 200)/ 20 ……..(3)

From eq (2) & eq (3)

Length of Train A = L = 400/3 meter

5) Answer: B

Solution:

According to the question,

Speed of train B = 20 m/s

Speed of train A = x m/s

Let length of Train A = Length of Train B = L meter

(S_A + S_B) = (Length of Train A + Length of Train B)/Time ……..(1)

(x - 10) = (2L)/ 10

(x - 10) = L/5……..(2)

Train A, crosses a bridge of length 250 m in 15 seconds

x = (L + 250)/ 15 ……..(3)

From eq (2) & eq (3)

Length of Train A = L = 50 meter

X=(50+250)/15=20 m/s

Speed of Train A = 20 m/s

6) Answer: B

Solution:

According to the question,

Speed of train = x m/s.

Let length of Train = L meter

Let length of platform = 2L meter

Let length of bridge = 4L meter

Speed = Length of Train + Length of Platform)/Time ……..(1)

Speed = 3L/ 30

10S = L ……..(2)

S = (Length of Train + Length of bridge)/Time

4S = L ……(3)

From eq (2) and eq (3) we can say that both the variables will get cancelled hence answer will be cannot be determined.

7) Answer: A

Solution:

According to the question,

Speed of train = x m/s

Let length of Train =200 meter

Let length of bridge = 200 meter

x = (Length of Train + Length of bridge)/Time ……..(1)

x = (400)/ 15

x = 80/3 m/s

x = 80×18/(5×3) = 96 kmph

8) Answer: D

Solution: According to the question,

Let length of Train = x meter.

Let length of platform = 300 meter.

Speed = (Length of Train + Length of platform)/Time .....(1)

When passing a man ,

Speed = (x)/10 .....(1)

When passing platform,

Speed = (x + 300)/ 25.....(2)

Solving eq (1) & eq (2)

Length of Train = 200 meter

9) Answer: A

Solution:

According to the question,

Speed of train = x m/s

Let length of Train =160 units

Let length of bridge =140 units

x = (Length of Train + Length of bridge)/Time .....(1)

x = (300)/ 15

x = 20 m/s

Speed in kmph = 72 kmph

10) Answer: A

Solution:

According to the question,

Let time = 1/6 minutes = 10 seconds

Speed of train A = 20 m/s

Speed of train B = 25 m/s

Let length of Train A + Length of Train B = x meter

(S_A + S_B) = (Length of Train A + Length of Train B)/Time .....(1)

20 + 25 = x/ 10

45 = x/10

x = 450 meter

Total length of both trains = 450 meters

11) Answer: D

Solution:

According to the question,

Let time = 1/3 minutes = 20 seconds

Speed of Truck = 54 kmph. = 54*5/18 = 15 m/s

Speed of train = 15 m/s

Let length of Train = L meter

(S_A + S_B) = (Length of Train + Length of Truck)/Time .....(1)

15 + 15 = L/20

30 = L/20

L = 600 meter

Length of Train = 600 meter

12) Answer: B

Solution:

According to the question,

Time = 33 seconds.

Speed of Bus = 36 kmph = 36*5/18 = 10 m/s

Speed of train = 15 m/s

Let length of Bus = 1x meter

Let length of Train = 10x meter

$(S_A + S_B)$ = (Length of Train A + Length of Train B)/Time .....(1)

(10 + 15) = (11x)/33

x = 75 units

Length of Train = 10x = 750 meter

13) Answer: D

Solution:

According to the question,

Let time = 20 seconds

Speed of train A = 5x

Speed of train B = 4x

Length of slower train = 150 meter

$(S_A + S_B)$ = (Length of Train A + Length of Train B)/Time .....(1)

4x + 5x = (200 + 150)/20

9x = (350)/20

x = 1.94 units

Speed of faster train = 5x = 9.72 m/s

14) Answer: C

Solution:

According to the question,

Let time = 48 seconds

Speed of train A = 2x

Speed of train B = x

Length of slower train = 100 meter

$S_A + S_B$ = (Length of Train A + Length of Train B)/Time .....(1)

3x = (200 + 100)/48

3x = 300/48

x = 2.08 units

Speed of slower train = x = 2.08 m/s

15) Answer: B

Solution:

According to the question,

Speed of Train A = 45 kmph

Time taken = 6 hours

Distance = 45× 6 = 270 kms

Actual time taken = 9 hours.

Reduced speed = Distance/Time

Reduced speed = 30 kmph

16) Answer: A

Solution:

According to the question,

Speed of Train A = 36 kmph

Time taken = 5 hours

Distance = 36× 5 = 180 kms

Delayed by time = 30 minutes

Each stoppage = 2 minutes

Total stoppage = 30/2 = 15 stoppage

But , 15th stoppage will be at destination so we don't count it.

Actual stoppage = 14

17) Answer: B

Solution:

	A	B
Time	5	3
Speed	3	5

We know that,

Speed α (1/Time) ……(1)

So the ratio of speeds = 3 : 5

18) Answer: A

Solution:

According to the question,

	A	B
Speed	3	4
Time	4	3

Time difference = 1 unit

1 unit = 2 hours

Time taken by A = 8 hours

Time taken by B = 6 hours

Distance = Speed × Time

Distance = 48 km

To cover Distance = (100 + 48) km

Distance = 148 kms

Time = 148/6

Time = 24.6 hours

19) Answer: C

Solution:

According to the question,

	A	B
Speed	3	2
Time	2	3

Time difference = 1 unit

1 unit = 1 hours

Time taken by A = 2 hours

Time taken by B = 3 hours

Distance = Speed × Time

Distance = 6 km

To cover total Distance = (2*6) km

Total distance = 12 kms

Time taken by B to cover total distance = 12/2

Time = 6 hours

20) Answer: D

Solution:

According to the question,

	A	B
Speed	30	45
Time	3	2

Time difference = 1 unit

1 unit = 1 hours

Time taken by A = 3 hours

Time taken by B = 2 hours

Distance = Speed× Time

Distance = 90 km

To cover Distance = (2×90 + 20) km

Distance = 200 kms

Time = 200/2

Time = 100 hours

21) Answer: A

Solution:

According to the question,

Speed of train = x m/s

Let length of Train = L units

x = (Length of Train)/Time .....(1)

x = L/10 .....(2)

(5x + 25) = (L) .....(3)

From eq (2) & eq (3)

x = 5 m/s

Speed of train = 5× 18/5 = 18 kmph

22) Answer: C

Solution:

According to the question,

Speed of train = 36× 5/18 = 10 m/s

Let length of Train = x meter

Let length of platform =200 meter

Train crosses signal in 20 sec, so

Speed = (Length of Train + signal)/Time .....(1)

10 = x/20

X = 200m

Length of Train = 200 meter

23) Answer: A

Solution:

Average speed = Total distance/Total time .....(1)

Average speed (40% of D + 60% of D + 50% of D + 25% of D)/(5 + 8 + 2 + 1)

Average speed = (175% of 400)/16

Average speed = 43.75 kmph

24) Answer: C

Solution:

Average speed = Total distance/Total time ……(1)

Average speed = (126 + 130)/(12 + 8)

Average speed = 256/20

Average speed = 12.8 kmph

25) Answer: B

Solution:

Average speed = Total distance/Total time ……(1)

Average speed = (121 + 111 + 139)/(5 + 9 + 11)

Average speed = 371/25

Average speed = 14.8 kmph

26) Answer: A

Solution:

According to the question,

Let Speed of Train A = x m/s

Speed of Train B = y m/s

(x + y) = (Length of Train A + Length of Train B)/Time ……..(1)

When travelling in opposite direction.

(x + y) = (300 + 200)/ 20

x + y = 25m/s……(1)

When travelling in same direction.

(x - y) = (300 + 200)/ 25

x - y = 20 m/s ……..(2)

From eq (1) & eq (2)

x = 22.5 m/s

27) Answer: D

Solution:

According to the question,

Let Speed of Train A = x m/s

Speed of Train B = y m/s

(x + y) = (Length of Train A + Length of Train B)/Time ……..(1)

When travelling in opposite direction.

(x + y) = (350 + 250)/ 10

x + y = 60m/s……(1)

When travelling in same direction.

(x - y) = (350 + 250)/40

x - y = 15 m/s ……..(2)

From eq (1) & eq (2)

y = 22.5 m/s

28) Answer: A

Solution:

According to the question,

Speed of train A = 100/5 = 20 kmph

Speed of train B = 80% of speed of Train A = 16 kmph.

Distance covered by Train B in one hour = 16 kms

29) Answer: C

Solution:

Average speed of A & B = Total distance/Total time ……(1)

Average speed of A & B = (100 + D)/(5 + 8)

25 = (100 + D)/(13)

D = 225 km

Speed of train B = (3× 225)/8

Speed of train B = 84.375 kmph

30) Answer: A

Solution:

Average speed of A & B = Total distance/Total time ……(1)

Average speed of A & B = (150 + D)/(7 + 9)

32.5 = (150 + D)/(16)

D = 370 km.

Speed of train B = (370)/9

Speed of train B = 41.1 kmph

31) Answer: D

Solution:

According to the question,

Let the time taken = t seconds.

So the speed = 9t m/s.

Speed = Distance covered/Time taken ……(1)

9t× t = 22500

t = 50 seconds

Speed = 450 m/s

Time = Distance/Speed

Time = 360× 1000/450

Time = 13.33 minutes

32) Answer: B

Solution:

According to the question,

Speed of train = x m/s

Let length of Train = y meter

Let length of platform = 3y meter.

Let length of bridge = 6y meter.

Speed = (Length of Train + Length of Platform)/Time ……..(1)

Speed = (4y)/10

10x = 4y ……..(2)

x = (Length of Train + Length of bridge)/Time

20x = 7y ……(3)

In eq (2) and eq (3) both the variables gets cancelled. So the answer will be 'Cannot be determined'

33) Answer: B

Solution:

According to the question,

Let the speed of train = y m/s

Length of Bridge = 300 meters

Length of train = x meters

Length of platform = 2x meters

Time taken to cross a Bridge = 20 seconds

Speed of Train = (length of Train + length of bridge)/Time taken ……(1)

Speed of train = (x + 300)/20

20y = x + 300 ……..(2)

To cross a platform,

10y = x ……..(3)

S = 30 m/s

Speed of Train = 30 m/s.

34) Answer: A

Solution:

According to the question,

Length of train = 360 meters.

Time taken to cross a pole = 1/10 minutes = 6 seconds.

Speed of Train = (length of Train)/Time taken

Speed of Train = 360/6 = 60 m/s

Speed of train = 60× 18/5 = 216 kmph

35) Answer: A

Solution:

According to the question

Speed of train = 36× 5/18 = 10 m/s

Let length of Train = (L) meter

Let length of bridge = (2L) meter

(S) = (Length of Train + Length of Platform)/Time ……..(1)

(10) = (3L)/ 30

L = 100 meter ……..(2)

Now speed = 45 kmph = 45× 5/18 = 12.5 m/s

(S) = (Length of Train + Length of bridge)/Time

12.5 = (100 + 200)/Time taken

Time taken = 24 sec

36) Answer: C

Solution:

According to the question,

Speed of train = 18× 5/18 = 5 m/s.

Let length of Train = (L) meter

Let length of platform = (L) meter.

(S) = (Length of Train + Length of Platform)/Time ……..(1)

(5) = (2L)/ 20

L = 50 meter ……..(2)

Now speed = 36 kmph = 36× 5/18 = 10 m/s.

(S) = (Length of Train + Length of bridge)/Time

10 = (100)/Time taken

Time taken = 10 sec.

37) Answer: D

Solution:

According to the question,

Let Distance = 450 kms

Speed of Train A = 60 kmph.

Speed of Train B = 75 kmph.

Train Q takes 1 minutes to cover 1 kms.

Lets assume that, Train Q will also leave at 8 : 30 so this will add 60 kms in the total distance.

Total distance = (450 + 60) kms

(Speed of P + Speed of Q) = Distance/Time taken……(1)

(75 + 60) = (510)/Time taken

T = 3.77 hours

38) Answer: B

Solution:

According to the question,

Distance = 750 kms

Speed of Train P = 50 kmph.

Speed of Train Q = 60 kmph.

Train Q takes 1 minutes to cover 1 kms.

Lets assume that, Train Q will also leave at 8 : 00 so this will reduce 30 kms in the total distance.

Total distance = (750 - 30) kms

(Speed of P + Speed of Q) = Distance/Time taken……(1)

(50 + 60) = (720)/Time taken

T = 6.54 hours

39) Answer: A

Solution:

According to the question,

Let Distance = D kms.

Speed of Train A = 50 kmph.

Speed of Train B = 30 kmph.

Train B takes 1 minutes to cover 1/2 kms.

Lets assume that, Train B will also leave at 10 : 00 so this will reduce 15 kms in the total distance.

Total distance = (D - 15) kms

(Speed of P + Speed of Q) = Distance/Time taken……(1)

(50 + 30) = (D - 30)/4.25

D = 370 Kms.

Total distance = (D - 15) = 355 kms

40) Answer: B

Solution:

According to the question,

Let Distance = D kms.

Speed of Train P = 50 kmph

Speed of Train Q = 30 kmph

Train Q takes 1 minutes to cover 1/2 kms

Lets assume that, train Q will also leave at 6 : 00 so this will add 15 kms in the total distance.

Total distance = (D + 15) kms

(Speed of P + Speed of Q) = Distance/Time taken……(1)

(50 + 30) = (D + 30)/3.5

D = 250 Kms.

Total distance = (D + 15) = 265 kms.

41) Answer: A

Solution:

According to the question,

Let the length of bridge = 200 meters.

Let the length of train = L meters.

Speed of Train = x m/s.

Speed of Train = (Length of Train + length of platform)/Time ……(1)

x = (L)/10

10x = L ……(2)

Again from eq(1),

x = (200 + L)/15

15x = (200 + L) ……(3)

From eq(2) & eq(3)

Length of bridge = 400 meter.

42) Answer: D

Solution:

According to the question,

Let T = Time taken to cross man.

Let length of Train A = 150 meter.

Length of Train B = 200 meter.

$(S_A + S_B)$ = (Length of Train A + Length of Train B)/Time ……..(1)

(20 + 15) = (350)/ T

T = 10 Sec

Time taken (T) = 10 Sec.

43) Answer: B

Solution: According to the question,

Distance of train from Man = 750 meters.

Let the length of train = 150 meters.

Speed of Man = 5 m/s.

Speed of Man = (Length of Train + length of platform)/Time ……(1)

5 = (900)/T

T = 180 Seconds.

Time taken by Man to cross train = 180 seconds.

44) Answer: A

Solution: According to the question,

Let the length of platform = P meters.

Let the length of train = x meters.

Speed of Train = 36 kmph = 36× 5/18 = 20 m/s.

Speed of Train = (Length of Train + length of platform)/Time ……(1)

Train crosses a signal in 10 seconds

20 = (x)/10

x = 200 meter.

The length of train = x = 200 meters.

Again from eq(1),

20 = (200 + P)/20

P = 200 meters

The length of platform = P = 200 meters

45) Answer: B

Solution:

According to the question,

Let the length of platform = x meters

Let the length of train = 3x meters

Speed of Train = 20 m/s

Speed of Train = (Length of Train + length of platform)/Time ……(1)

20 = (3x + x)/40

x = 200 meter

The length of platform = x = 200 meters

46) Answer: A

Solution:

According to the question,

Let the length of Basin = B meters.

Speed of Train = 36 kmph = 36× 5/18 = 10 m/s.

Length of Train = 150 meter

Speed of Train = (Length of Train + length of platform)/Time ……(1)

10 = (150 + P)/50

P = 350 meter

Length of River Basin =350 m

47) Answer: C

Solution:

According to the question,

Initial speed of Train = (S) m/s.

Let the length of Train = (L) meters.

The length of Platform = 250 meters.

Speed of Train = **(**length of Train + length of Platform)/Time taken ……..(1)

20S = (L + 250) ……..(2)

To cross a signal,

15S = L ……..(3)

From eq (2) & eq (3)

S = 50 m/s

Speed in kmph = 50× 18/5 kmph

Speed in kmph = 180 kmph

48) Answer: A

Solution:

According to the question,

Speed of Train = 36×5/18 = 10 m/s

Total Distance = 36× 6 = 216 kms

16.6% of distance = 36 kms

Remaining distance = 180 kms

Time taken to reach 16.6% distance = 36/36 = 1 hours

Delay time = 35 minutes

Total time consumed = 1 hours 35 minutes

Remaining time = 4 hours 25 minutes

Increased Speed = Distance/Time

Increased speed = 180/(4(25/60)) kmph

Increased speed = 40.75 kmph

Percentage increased = { (40.75 - 36)/36 }× 100

Percentage increased = 13.19%

49) Answer: D

Solution:

According to the question,

Speed of Train = 20 x18/5=72 kmph

Total Distance = 72× 6 = 432 kms

50% of distance = 216 kms

Remaining distance = 216 kms

Time taken to reach 50% distance = 216/72 = 3 hours

Delay time = 25 minutes

Total time consumed = 3 hours 25 minutes

Remaining time = 2 hours 35 minutes

Increased Speed = Distance/Time

Increased speed = 216/(2(35/60)) kmph

Increased speed = 83.61 kmph

Percentage increased = { (83.61 - 72)/72 }× 100

Percentage increased = 16.125%

50) Answer: A

Solution:

According to the question,

Let the length of platform = P meters.

Speed of Train = 36 kmph = 36× 5/18 = 10 m/s.

Length of Train = 150 meter.

Speed of Train = (Length of Train + length of platform)/Time ……(1)

10 = (150 + P)/20

P = 50 meter