Problems on Trains

1. A train covers a distance of 12 km in 10 minutes. If it takes 6 seconds to pass a telegraph post, then the length of the train is?

A. 90 m
B. 100 m
C. 140 m
D. 120 m

Answer & Explanation
Answer :
120 m

Explanation :
Speed = (12/10*60) km/hr = (72*5/18) m/sec. Length of the train = (speed*time) = (20*6) m = 120 m.

---

2. How long does a train 110 meters long running at the speed of 72 km/hr take to cross a bridge 132 m in length?

A. 9.8 sec
B. 12.1 sec
C. 12.42 sec
D. 14.3 sec

Answer & Explanation
Answer :
12.1 sec

Explanation :
Speed =(72*5/18) m/sec = 20 m/sec Total distance covered = (110+132) m = 242 m. Hence Required time = (242 /20) sec = 12.1 sec

---

3. Two trains 140 m and 160 m long run at the speed of 60km/hr and 40 km/hr respectively in opposite directions on parallel tracks.The time (in seconds) which they take to cross each other is?

A. 9
B. 9.6
C. 10

D. 10.8

Answer & Explanation
Answer :
10.8

Explanation :
Relative speed = (60+40) km/hr = (100*5/18) m/sec =(250/9) m/sec Distance covered in crossing each other = (140+160) m = 300 m Required time =(300*9/250) sec = 54/5 sec = 10.8 sec

---

4. Two trains travel in opposite directions at 36 km/ph and 45 km/ph and a man sitting in slower train passes the faster train in 8 seconds.The length of the faster train is?

A. 80 m
B. 100 m
C. 120 m
D. 180 m

Answer & Explanation
Answer :
180 m

Explanation :
Relative speed =(36+45) km/hr =(81*5/18) m/sec = (45/2) m/sec Length of train =(45/2*8) m =180 m

---

5. A train crosses a platform 100 m long in 60 sec at a speed of 45 km/hr.The time taken by the train to cross an electric pole is?

A. 8 sec
B. 52 sec
C. 1 minute
D. data inadequate

Answer & Explanation
Answer :
52 sec

Explanation :
Speed = (45*5/18) m/sec = (25/2) m/sec Let the length of the train be X meters. Then X+100 /(25/2) = 60 Therefore time taken by the train to cross an electric pole =(650*2/25) seconds = 52 seconds

6. Two train 200 m and 150 m long are running on parallel rails at the rate of 40 km/ph and 45 km/ph respectively. In how much time will they cross each other if they are running in the same direction?

A. 72 sec
B. 132 sec
C. 192 sec
D. 252 sec

Answer & Explanation
Answer :
252 sec

Explanation :
Relative speed = (45 - 40) km/ph = 5 km/ph =(5*5/18)m/sec = (25/18) m/sec Total distance covered = sum of lengths of the trains = 350 m Time taken =(350*18/25) sec = 252 seconds

---

7. A train takes 18 seconds to pass completely through a station 162 meter long and 15 seconds through another station 120 m long.The length of the train is?

A. 70m
B. 80m
C. 90m
D. 100m

Answer & Explanation
Answer :
90m

Explanation :
Let the length of the train be x meters x+162/18 = x+120/15 =15(x+162) = 18(x+120) = x= 90 m

---

8. A train 132 m long passes a telegraph pole in 6 seconds. Find the speed of the train?

A. 70 km/hr
B. 72 km/hr
C. 79.2 km/hr
D. 80 km/hr

Answer & Explanation
Answer :
79.2 km/hr

Explanation :
Speed =(132/6) m/sec = (22*18/5) km/hr = 79.2 km/hr.

---

9. A train is moving at a speed of 132 km/hr.If the length of the train is 110 meters,how long will it take to cross a railway platform 165 meters long?

A. 7 sec
B. 7 1/2 sec
C. 6 1/2 sec
D. 6 sec

Answer & Explanation
Answer :
7 1/2 sec

Explanation :
Speed of train = (132 *5/18) m/sec = (110/3)m/sec Distance covered in passing the platform= (110+165) =275 m Therefore time taken = (275*3/110) sec = 15/2 sec= 7 1/2 sec

---

10. A train moves past a telegraph post and a bridge 264m long in 8 seconds and 20 seconds respectively.What is the speed of the train?

A. 69.5 km/hr
B. 70 km/hr
C. 79 km/hr
D. 79.2 km/hr

Answer & Explanation
Answer :
79.2 km/hr

Explanation :
Let the length of the train be x meters and its speed be y m/sec They x/y = 8 = x= 8y Now x+264/20 =y 8y+264 =20y y=22 Speed =22m/sec =(22*18/5)km/hr = 79.2 km/hr

---

11. A train 240 m long passed a pole in 24 seconds. How long will it take to pass a platform 650 m long?

A. 65 sec
B. 89 sec
C. 100 sec
D. 150 sec

Answer & Explanation
Answer :
89 sec

Explanation :
Speed = (240/24) m/sec = 10 m/sec. Therefore required time = (240+650/10) sec = 89 sec.

---

12. A man sitting in a train which is traveling at 50 km/hr observes that a good train traveling in opposite direction takes 9 seconds to pass him. If the goods train is 280 m long find its speed?

A. 65 km/hr
B. 60 km/hr
C. 64 km/hr
D. 62 km/hr

Answer & Explanation
Answer :
62 km/hr

Explanation :
Relative speed =(280/9) m/sec = (280/9*18/5) km/hr = 112 km/hr Hence speed of the goods train =(112 - 50) = 62km/hr

---

13. A train 100 meters long take as 6 seconds to cross a man walking at 5 km/hr.In a direction opposite to that of the train.Find the speed of the train?

A. 57 km/hr
B. 55 km/hr
C. 48 km/hr
D. 50 km/hr

Answer & Explanation
Answer :
55 km/hr

Explanation :
Let the speed of the train be X km/hr Speed of the train relative to man = (X+5) km/hr = (X+5) * 5/18 m/sec 100/(X+5)*5/18 = 6 30(X+5) = 1800 = X=55 Speed of the train is 55 Km/ph

---

14. A man is standing on a railway bridge which is 180 m long.He finds that a train crosses the bridge in 20 sec but himself in 8 sec.Find the length of the train and its

speed?

A. 54 km/hr
B. 52 km/hr
C. 58 km/hr
D. 60km/hr

Answer & Explanation
Answer :
54 km/hr

Explanation :
Let the length of the train be X meters. Then the train covers X meters in 8 sec and (X+180) meters in 20 seconds. Therefore X/8 = X+180/20 = 20x = 8 (X+180) = X =120 Therefore length of the train = 120m Speed of the train = (120/8) m/sec = m/sec=(15*18/5)km/hr = 54 km/hr

---

15. A train 110 m long passes a man running at 6 km/ph in the direction opposite to that of train in 6 seconds,the speed of the train is?

A. 54 km/hr
B. 60 km/hr
C. 66 km/hr
D. 72 km/hr

Answer & Explanation
Answer :
60 km/hr

Explanation :
Speed of the train relative to man =(110/6) m/sec = (110/6*18/5) km/hr = 66 km/hr Let the speed of train be x km/ph. Then relative speed = (x+6) km/ph X= 60 km/hr

---

16. The length of train and that of platform are equal. If with a speed of 90 km/hr, the train crosses the platform in one minute, then the length of the train (in meters) is?

A. 500
B. 600
C. 750
D. 900

Answer & Explanation
Answer :
750

Explanation :

Speed = (90*5/18) m/sec =25 m/sec; time 1 min. = 60 sec. Let the length of the train and that of the platform be x meters. then, 2x/60 =25 <=> x = 25*60/2 =750.

---

17. A train speeds past a pole in 15 seconds and a platform 100 m long in 25 seconds. Its length is?

A. 50 m
B. 150 m
C. 200 m
D. Data inadequate

Answer & Explanation
Answer :
150 m

Explanation :
Let the length of the train be x meters and its speed be y m/sec They x/y =15 Y=x/15 x+100/25 = x/15 x=150 m

---

18. Two trains of equal length are running on parallel lines in the same direction at 46 km/hr and 36 km/hr.The faster train passes the slower train in 36 seconds. The length of each train is?

A. 50 m
B. 72 m
C. 80 m
D. 82 m

Answer & Explanation
Answer :
50 m

Explanation :
Let the length of each of train be X meters, Then distance covered = 2x meters. Relative speed = (46-36) km /hr = (10*5/18) m/sec = (25/9) m/sec 2x/36= 25/9 = 2x =100 = x= 50

---

19. A train 150m long is running with a speed of 68 km/hr.In what time will it pass a man who is running at 8 km/hr in the same direction in which the train is going?

A. 5 sec
B. 8 sec
C. 6 sec
D. 9 sec

Answer & Explanation
Answer :
9 sec

Explanation :
Speed of the train relative to man = (68-8)km/ph = (60*5/18)m/sec = (50/3) m/sec Time taken by the train to cross the man Time taken by it to cover 150 m at (50/3) m/sec = (150*3/50) sec = 9 seconds

---

20. A train 110 meters long is running with a speed of 60 km/ph.In what time will it pass a man who is running at 6km/hr in the direction opposite to that in which the train is going?

A. 5 sec
B. 6 sec
C. 7 sec
D. 10 sec

Answer & Explanation
Answer :
6 sec

Explanation :
Speed of the train relative to the man = (60+6) km/hr = 66 km/hr =(66*5/18) m/sec = (55/3) m/sec Time taken to pass the man = (110*3/55)sec = 6 sec

---

21. A train 108 m long moving at a speed of 50 km/hr crosses a train 112 m long coming from opposite direction in 6 seconds.The speed of the second train is?

A. 48 km/hr
B. 54 km/hr
C. 66 km/hr
D. 82 km/hr

Answer & Explanation
Answer :
82 km/hr

Explanation :
Let the speed of the 2'nd train be x km/hr Relative speed =(x+50)km/hr =[(x+50)*5/18] m/sec = (250+5x/18) m/sec Distance covered =(108+112) = 220 m 220/(250+5x/18) = 6 <=> 250+5x = 660 <=> x = 82 km/hr

---

22. Two trains 100 meters and 120 meters long are running in the same direction with

speed of 72 km/hr and 54 km/hr in how much time will the first train cross the second?

A. 44 sec
B. 46 sec
C. 42 sec
D. 48 sec

Answer & Explanation
Answer :
44 sec

Explanation :
Relative speed of the trains = (72-54 = 18 km/hr) = (18*5/18) m/sec = 5m /sec Time taken by the trains to cross each other = Time taken to cover (100+120)m at 5 m/sec = (220/5)sec = 44 sec

---

23. A train 360 m long is running at a speed of 45 km/hr. What time will it pass a bridge 140 m long?

A. 40 sec
B. 42 sec
C. 45 sec
D. 48 sec

Answer & Explanation
Answer :
40 sec

Explanation :
Speed = (45*5/18) m/sec =25/2 m/sec. Total distance covered = (360+140) m = 500 m. Therefore required time = (500*2/25) sec =40 sec.

---

24. A train 125m long passes a man running at 5 km /ph in the same direction in which the train is going in 10 seconds.The speed of the train is?

A. 40 km/hr
B. 50 km/hr
C. 54 km/hr
D. 55 km/hr

Answer & Explanation
Answer :
50 km/hr

Explanation :
Speed of the train relative to man = (125/10) m/sec =(25/2) m/sec =(25/2*18/5) km/hr

=45km/hr Let the speed of the train be x km/ph. Then relative speed = (x-5) km/ph x-5 =45 X= 45+5 =50 km/hr

---

25. Two trains are moving opposite direction at 60 km/hr and 90 km/hr.Their lengths are 1.10 km/hr and 0.9 km respectively. The time taken by the slower train to cross the faster train in seconds is?

A. 36
B. 45
C. 48
D. 49

Answer & Explanation
Answer :
48

Explanation :
Relative speed = (60+90) km/hr (150*5/18)m/sec =(125/3) m/sec Distance covered =(1.10+0.9)km =2 km =2000m Required time =(2000*3/125) sec = 48 seconds

---