

Time and Distance

1. A truck covers a distance of 550 meters in 1 minutes whereas a bus covers a distance of 33 kilometers in 45 minutes. The ratio of their speeds is?

- A. 3:4
- B. 4:3
- C. 3:5
- D. 50:3

Answer & Explanation

Answer :

3:4

Explanation :

Ratio of speeds = $(550/60 \times 18/5) : (33/45 \times 60) = 33:44 = 3:4$.

2. A person travels from P to Q at a speed of 40 kilometer per hour and returns by increasing his speed by 50%. What is his average speed for both the trips?

- A. 36 kilometer per hour
- B. 45 kilometer per hour
- C. 48 kilometer per hour
- D. 50 kilometer per hour

Answer & Explanation

Answer :

48 kilometer per hour

Explanation :

Speed on return trip = 150% of 40 = 60 kilometer per hour. therefore average speed = $(2 \times 40 \times 60 / (40 + 60))$ km/hr = $(4800/100)$ km/hr = 48 km/hr.

3. A man on tour travels first 160 km at 64 km/hr and the next 160 km at 80 km/hr. The average speed for the first 320 km of the tour is:

- A. 35 km/hr
- B. 35.5 km/hr
- C. 36 km/hr
- D. 71.11 km/hr

Answer & Explanation

Answer :

71.11 km/hr

Explanation :

Total time taken = $(160/64 + 160/8)$ hrs = $9/2$ hrs Average speed = $(320 \times 2/9)$ km/hr = 71.11 km/hr

4. An aeroplane covers a certain distance at a speed of 240 km/ph in 5 hrs. To cover the same distance in $1 \frac{2}{3}$ hours it must travel at a speed of:

- A. 300 km/ph
- B. 720 km/hr
- C. 600 km/ph
- D. 360 km/hr

Answer & Explanation

Answer :

720 km/hr

Explanation :

Distance = (240×5) km = 1200 km Required speed = $(1200 \times 3/5)$ km/hr = 720 km/hr

5. A train when moves at an average speed of 40 km/hr, reaches its destination on time. When its average speed becomes 35 km/hr, then it reaches its destination 50 mins late. Find the length of the journey.

- A. 30 km
- B. 40 km
- C. 70 km
- D. 80 km

Answer & Explanation

Answer :

70 km

Explanation :

Difference between timings = 15 mins = $1/4$ hr. Let the length of the journey be x km. then $x/35 - x/40 = 1/4 = 8x - 7x = 70 = x = 70$ km

6. A person crosses a 600 m long street in 5 minutes. What is his speed in km per hour?

- A. 3.6
- B. 7.2

- C. 8.4
- D. 10

Answer & Explanation

Answer :

7.2

Explanation :

Speed = $(600/5 \times 60)$ m/sec = 2 m/sec = $(2 \times 18/5)$ km/hr = 7.2 km/hr.

7. A is faster than B. A and B each walk 24 km. The sum of their speeds is 7 km/hr and the sum of times taken by them is 14 hours. Then A's speed is equal to:

- A. 3 km/hr
- B. 4 km/hr
- C. 5 km/hr
- D. 7 km/hr

Answer & Explanation

Answer :

4 km/hr

Explanation :

Let A's speed = x km/hr. Then B's speed = $(7-x)$ km/hr
 $24/x + 24/(7-x) = 14$
 $24(7-x) + 24x = 14x(7-x)$
 $168 - 24x + 24x = 98x - 14x^2$
 $14x^2 - 74x + 168 = 0$
 $(x-3)(x-4) = 0$
 $x=3$ or $x=4$
Since A is faster than B, so A's speed = 4 km/hr and B's speed = 3 km/hr.

8. one of the two buses completes a journey of 300 km in $7 \frac{1}{2}$ hours and the other a journey of 450 km in 9 hours. the ratio of their average speeds is?

- A. 2:3
- B. 3:4
- C. 4:5
- D. 8:9

Answer & Explanation

Answer :

4:5

Explanation :

Ratio of speeds = $(300 \times 2/15) : (450/9) = 40 : 50 = 4:5$.

9. Which of the following trains is the fastest?

- A. 25 m/sec
- B. 1500 m/min
- C. 90 km/hr
- D. None of these

Answer & Explanation

Answer :

None of these

Explanation :

25 m/sec = $(25 * 18/5)$ km/hr = 90 km/hr. And 25 m/sec = $(25 * 60)$ m/min = 1500 m/min. So, all the three speeds are equal.

10. A car drive travels from the plains to the hill station, which are 200 km apart at an average speed of 40 km/hr. In the return the trip, he covers the same distance at an average speed of 20 km/hr. the average speed of the car over the entire distance of 400 km is?

- A. 25 km/hr
- B. 26.67 km/hr
- C. 28.56 km/hr
- D. 30 km/hr

Answer & Explanation

Answer :

26.67 km/hr

Explanation :

Average speed = $(2*40*20/ 40+60)$ km/hr = $80/3$ km/hr = 26.67 km/hr.

11. A can complete a journey in 10 hours.He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr.Find the total journey in km.

- A. 220 km
- B. 224km
- C. 230km
- D. 234km

Answer & Explanation

Answer :

224km

Explanation :

Let the total distance be x km.Then, $1/2 x/21 + 1/2x/24 = 10 = x/21+x/24 = 20$ $15x = 168*20 = x = (168*20/15) = 224$ km

12. Sound is said to travel in air at about 1100 feet per second. A man hears the axe striking the tree, $11\frac{1}{5}$ seconds after sees it strike the tree. How far is the man from the wood chopper?

- A. 2197 ft
- B. 2420 ft
- C. 2500 ft
- D. 2629 ft

Answer & Explanation

Answer :

2420 ft

Explanation :

Distance = $(1100 \times 11\frac{1}{5})$ feet = 2420 feet.

13. An athlete runs 200 metres race in 24 seconds. his speed is?

- A. 20 km/hr
- B. 24 km/hr
- C. 28.5 km/hr
- D. 30 km/hr

Answer & Explanation

Answer :

30 km/hr

Explanation :

Speed = $200/24$ m/sec = $25/3$ m/sec = $(25/3 \times 18/5)$ km/hr = 30 km/hr.

14. A motor car starts with the speed of 70 km/hr with its speed increasing every two hours by 10 kilo meter per hour. In many hours will it cover 345 kilometers?

- A. $2\frac{1}{4}$ hrs
- B. 4 hrs 5 min
- C. $4\frac{1}{2}$ hrs
- D. None of these

Answer & Explanation

Answer :

$4\frac{1}{2}$ hrs

Explanation :

Distance covered in first 2 hours = (70×2) km = 140 km. Distance covered in next 2

hours = (80×2) km = 160 km. Remaining distance = $345 - (140 + 160) = 45$ km. Speed in the fifth hour = 90 km/hr. Time taken to cover 45 km = $(45/90)$ hr = $1/2$ hr. Therefore total time taken = $(2 + 2 + 1/2) = 4 \frac{1}{2}$ hrs.

15. A certain distance is covered by a cyclist at a certain speed. If a jogger covers half the distance in double the time, the ratio of the speed of the jogger to that of the cyclist is?

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

Answer & Explanation

Answer :

1:4

Explanation :

Let the distance covered by the cyclist be x and the time taken be y . Then, Required ratio = $1/2x/2y : x/y : 1 = 1:4$.

16. A is twice as fast as B and B is thrice as fast as C is. the journey covered by C in 54 minutes will be covered by B in?

- A. 18 min
- B. 27 min
- C. 38 min
- D. 9 min

Answer & Explanation

Answer :

18 min

Explanation :

Let C's speed = x km/hr. then, B's speed = $3x$ km/hr and A's speed = $6x$ km/hr. Hence, ratio of speed of A,B,C = $6x : 3x : x = 6 : 3 : 1$. Ratio of times taken = $1/6 : 1/3 : 1 = 1 : 2 : 6$. If C takes 6 min., then B takes 2 min. If C takes 54 min., then B takes $(2/6 \times 54)$ min. = 18 min.

17. A car travels the first one-third of a certain distance with a speed of 10 km/hr, the next $1/3$ rd distance with a speed of 20 km/hr, and the last $1/3$ rd distance with a speed 60 km/hr. the average speed of the car for the whole journey is?

- A. 18 km/hr
- B. 24 km/hr

- C. 30 km/hr
- D. 36 km/hr

Answer & Explanation

Answer :

18 km/hr

Explanation :

Let the whole distance traveled be x km/hr and the average speed of the car for the whole journey be y km/hr. Then, $(x/3) / 10 + (x/3) / 20 + (x/3) / 60 = x/y = x/30 + x/60 + x/180 = x/y = 1/18 y = 1 = y = 18$ km/hr

18. A car traveling with $5/7$ of its actual speed covers 42 km in 1 hour 40 minutes 48 sec. Find the actual speed of the car.

- A. $17 \frac{6}{7}$ km/hr
- B. 25 km/hr
- C. 30 km/hr
- D. 35 km/hr

Answer & Explanation

Answer :

35 km/hr

Explanation :

Time taken = 1hr 40 minutes 48 seconds = $1 \frac{44}{5}$ minutes = $1 \frac{51}{75}$ hrs = $\frac{126}{75}$ hrs
 Let the actual speed be x km/hr Then $\frac{5}{7}x * \frac{126}{75} = 42$ or $x = \frac{42 * 7 * 75}{5 * 126} = 35$ km/hr

19. A farmer traveled a distance of 61km in 9 hrs. He traveled partly on foot @ 4 km/hr and partly on bicycle @ 9 km/hr. The distance traveled on foot is:

- A. 14 km
- B. 15 km
- C. 16 km
- D. 17 km

Answer & Explanation

Answer :

16 km

Explanation :

Let the distance traveled on foot be x km then distance traveled on bicycle = $(61-x)$ km so $\frac{x}{4} + \frac{(61-x)}{9} = 9$ $9x + 4(61-x) = 9 * 36 = 5x = 80 = x = 16$ km

20. A train travels at an average of 50 miles per hour for 2 1/2 hours and then travels at a speed of 70 miles per hour for 1 1/2 hours. How far did the train travel in the entire 4 hours?

- A. 120 miles
- B. 150 miles
- C. 200 miles
- D. 230 miles

Answer & Explanation

Answer :

230 miles

Explanation :

Total distance traveled = $\{(50 \times 2 \frac{1}{2}) + (70 \times 1 \frac{1}{2})\}$ miles = $(125 + 105)$ miles = 230 miles.

21. A boy rides his bicycle 10 km at an average speed of 12 km per hour and again travels 12 km at an average speed of 10 km/hr. His average speed for the entire trip is approximately

- A. 10.4 km/hr
- B. 10.8 km/hr
- C. 11 km/hr
- D. 12.2 km/hr

Answer & Explanation

Answer :

10.8 km/hr

Explanation :

Total distance travel = $(10 + 12)$ km/hr = 22 km/hr
Total time taken = $(\frac{10}{12} + \frac{12}{10})$ hours = $\frac{61}{30}$ hrs
Average speed = $(\frac{22 \times 30}{61})$ km/hr = 10.8 km/hr

22. A train covers a distance of 10 km in 12 minutes. If its speed is decreased by 5 km/hr the time taken by it to cover the same distance will be:

- A. 10 minutes
- B. 11 minutes 20 sec
- C. 13 minutes
- D. 13 minutes 20 sec

Answer & Explanation

Answer :

13 minutes 20 sec

Explanation :

Speed = $(10 \times 60 / 12)$ km/hr = 50 km/hr New speed = $(50 - 5)$ km/hr = 45 km/hr Time taken = $(10 / 45)$ hr = $(2 / 9 \times 60)$ min = $13 \frac{1}{3}$ min = 13 min 20 sec

23. A sales man travels a distance of 50 km in 2 hrs and 30 minutes. How much faster in kilometers per hour on an average must he travel to make such a trip in $\frac{5}{6}$ hour less time?

- A. 10
- B. 20
- C. 30
- D. None of these

Answer & Explanation

Answer :

10

Explanation :

Time required = $(2 \text{ hrs } 30 \text{ min} - 50 \text{ min}) = 1 \text{ hr } 40 \text{ min} = 1 \frac{2}{3}$ hrs Required speed = $(50 \times \frac{3}{5})$ km/hr = 30 km/hr Original speed = $(50 \times \frac{2}{5})$ km/hr = 20 km/hr Difference in speed = $(30 - 20)$ km/hr = 10 km/hr

24. Starting from his house one day, a student walks at a speed of $2 \frac{1}{2}$ km/hr and reaches his school 6 mins late. Next day he increases his speed by 1 km/hr and reaches the school 6 mins early. How far is the school from his house?

- A. 1 km
- B. $1 \frac{1}{2}$ km
- C. $1 \frac{3}{4}$ km
- D. 2 km

Answer & Explanation

Answer :

$1 \frac{3}{4}$ km

Explanation :

Let the distance be x km Difference in timing = 12 mins = $\frac{12}{60}$ hrs = $\frac{1}{5}$ hrs. Hence $2x / \frac{5}{2} - 2x / 3 = \frac{1}{5}$ = $14x - 10x = 7 = x = 1 \frac{3}{4}$ km/hr

25. Walking $\frac{6}{7}$ th of his usual speed, a man is 12 minute too late. The usual time taken by him to cover that distance is?

- A. 1 hr
- B. 1 hr 12 mins

C. 1 hr 15 mins

D. 1 hr 20 mins

Answer & Explanation

Answer :

1 hr 12 mins

Explanation :

New speed = $\frac{6}{7}$ of usual speed New time = $\frac{7}{6}$ of usual time ($\frac{7}{6}$ of usual time) - (usual time) = $\frac{1}{5}$ hrs $\frac{1}{6}$ of usual time = $\frac{1}{5}$ hrs usual time = $\frac{6}{5}$ hrs = 1hr 12mins
