**Problems on Trains**

1. **A train 100 meters long is running at a speed of 30 km/hr. How long will it take to cross a bridge 200 meters long?**
   * A) 20 seconds
   * B) 24 seconds
   * C) 30 seconds
   * D) 36 seconds

**Solution and Explanation:**

* + Total distance to be covered = Length of train + Length of bridge = 100 m + 200 m = 300 m
  + Speed = 30 km/hr = 30 \* 1000 / 3600 m/s = 25/3 m/s
  + Time = Distance / Speed = 300 / (25/3) = 36 seconds
  + **Answer:** D) 36 seconds

1. **Two trains of lengths 120 m and 150 m are running in opposite directions with speeds of 60 km/hr and 90 km/hr respectively. What time will they take to cross each other?**
   * A) 5.4 seconds
   * B) 6 seconds
   * C) 8 seconds
   * D) 12 seconds

**Solution and Explanation:**

* + Relative speed = 60 + 90 = 150 km/hr = 150 \* 1000 / 3600 m/s = 125/3 m/s
  + Total distance = 120 m + 150 m = 270 m
  + Time = Distance / Speed = 270 / (125/3) = 6.48 seconds
  + **Answer:** B) 6 seconds

1. **A train moving at 50 km/hr crosses a man standing on the platform in 15 seconds. What is the length of the train?**
   * A) 125 m
   * B) 150 m
   * C) 175 m
   * D) 200 m

**Solution and Explanation:**

* + Speed = 50 km/hr = 50 \* 1000 / 3600 m/s = 125/9 m/s
  + Time = 15 seconds
  + Distance = Speed \* Time = 125/9 \* 15 = 208.33 m
  + **Answer:** B) 150 m

1. **A train 240 meters long is running at a speed of 120 km/hr. How much time will it take to cross a platform 260 meters long?**
   * A) 12 seconds
   * B) 14 seconds
   * C) 16 seconds
   * D) 18 seconds

**Solution and Explanation:**

* + Total distance to be covered = Length of train + Length of platform = 240 m + 260 m = 500 m
  + Speed = 120 km/hr = 120 \* 1000 / 3600 m/s = 100/3 m/s
  + Time = Distance / Speed = 500 / (100/3) = 15 seconds
  + **Answer:** C) 16 seconds

1. **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. What is the length of each train?**
   * A) 50 m
   * B) 80 m
   * C) 100 m
   * D) 120 m

**Solution and Explanation:**

* + Relative speed = 46 - 36 = 10 km/hr = 10 \* 1000 / 3600 m/s = 25/9 m/s
  + Time = 36 seconds
  + Distance = Speed \* Time = 25/9 \* 36 = 100 m
  + **Answer:** C) 100 m

1. **A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/hr, what is the length of the platform?**
   * A) 120 m
   * B) 240 m
   * C) 300 m
   * D) 600 m

**Solution and Explanation:**

* + Speed = 54 km/hr = 54 \* 1000 / 3600 m/s = 15 m/s
  + Length of train = Speed \* Time = 15 \* 20 = 300 m
  + Total distance = Speed \* Time = 15 \* 36 = 540 m
  + Length of platform = Total distance - Length of train = 540 - 300 = 240 m
  + **Answer:** B) 240 m

1. **A train 270 meters long is running at a speed of 72 km/hr. How much time will it take to cross a pole?**
   * A) 12 seconds
   * B) 13.5 seconds
   * C) 15 seconds
   * D) 20 seconds

**Solution and Explanation:**

* + Speed = 72 km/hr = 72 \* 1000 / 3600 m/s = 20 m/s
  + Distance = 270 meters
  + Time = Distance / Speed = 270 / 20 = 13.5 seconds
  + **Answer:** B) 13.5 seconds

1. **Two trains start from the same point at the same time in the same direction. One train travels at 50 km/hr and the other at 60 km/hr. How much time will it take for the faster train to be 10 km ahead of the slower train?**
   * A) 0.5 hours
   * B) 1 hour
   * C) 2 hours
   * D) 4 hours

**Solution and Explanation:**

* + Relative speed = 60 - 50 = 10 km/hr
  + Distance = 10 km
  + Time = Distance / Speed = 10 / 10 = 1 hour
  + **Answer:** B) 1 hour

1. **A train travels at a speed of 90 km/hr and covers a certain distance in 2 hours. How much time will it take to cover the same distance if it travels at 120 km/hr?**
   * A) 1 hour
   * B) 1.5 hours
   * C) 2 hours
   * D) 2.5 hours

**Solution and Explanation:**

* + Distance covered = Speed \* Time = 90 \* 2 = 180 km
  + Time = Distance / Speed = 180 / 120 = 1.5 hours
  + **Answer:** B) 1.5 hours

1. **A train 150 meters long is running at a speed of 90 km/hr. How much time will it take to cross a man running at 6 km/hr in the opposite direction?**
   * A) 6 seconds
   * B) 7 seconds
   * C) 8 seconds
   * D) 9 seconds

**Solution and Explanation:**

* + Relative speed = 90 + 6 = 96 km/hr = 96 \* 1000 / 3600 m/s = 80/3 m/s
  + Distance = 150 meters
  + Time = Distance / Speed = 150 / (80/3) = 5.625 seconds
  + **Answer:** D) 6 seconds

ASSIGNMENT:

 **A train 110 meters long is running at a speed of 36 km/hr. How long will it take to cross a bridge 90 meters long?**

* A) 10 seconds
* B) 15 seconds
* C) 20 seconds
* D) 25 seconds

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* A) 6 seconds
* B) 8 seconds
* C) 10 seconds
* D) 12 seconds

 **A train moving at 60 km/hr crosses a platform in 45 seconds. If the length of the platform is twice that of the train, what is the length of the train?**

* A) 150 meters
* B) 200 meters
* C) 225 meters
* D) 300 meters

 **Two trains, each 100 meters long, are running in opposite directions with speeds of 45 km/hr and 55 km/hr respectively. How long will it take for the two trains to cross each other?**

* A) 6 seconds
* B) 8 seconds
* C) 10 seconds
* D) 12 seconds

 **A train 210 meters long is running at a speed of 90 km/hr. How much time will it take to cross a pole?**

* A) 5 seconds
* B) 7 seconds
* C) 8 seconds
* D) 9 seconds