TRAINS - SOLVED EXAMPLES

Q 1 - What is 90 kmph as metres per second?

A - 15 m /sec

B - 20 m /sec

C - 25 m /sec

D - 30 m /sec

Answer - C

Explanation

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90 kmph = ( 90 * 5/18) m/sec = 25 m /sec.
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Q 2 - What is 35 m/sec as km/hr?

A - 123 km/hr

B - 124 km/hr

C - 125 km/hr

D - 126 km/hr

Answer - D

Explanation

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35 m/sec = (35 * 18 / 5 ) km/hr = 126 km/hr.
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Q 3 - A 75m long train is running at 54 km/hr. In how much time will it cross an electric pole?

A - 25 sec

B - 20 sec

C - 15 sec

D - 5 sec

Answer - D

Explanation

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Speed of the train = ( 54 * 5 / 18) m/sec = 15 m / sec.
Time taken to cross an electric pole = Time taken to cover 75m
= ( 75 / 15 ) sec = 5 sec.
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Q 4 - A 415 m long train is running at 63 km/hr. In how much time will it cross a tunnel 285 m long?

A - 40 sec

B - 50 sec

C - 60 sec

D - 70 sec

Answer - A

Explanation

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Speed of the train= ( 63 * 5 / 18) m/sec = 35/2  m/sec.
Time taken to cross the tunnel = Time taken to cover ( 415 + 285) m
= ( 700 * 2/35 ) sec = 40 sec.
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Q 5 - A train passes a standing man in 3 seconds and a platform 105 m long in 8 seconds. Find the length of the train and its speed?

A - 59 m, 75.6 km/hr

B - 61 m, 72.6 km/hr

C - 63 m, 75.6 km/hr

D - 66 m, 79.6 km/hr

Answer - C

Explanation

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Let the length of the train be x metres and its  speed be y km/hr i.e.  (5y/18 )
m/sec.
Then, x / ( 5y / 18 ) = 3 ⇒ 18x = 15y ⇒ 6x = 5y.
Also, ( x + 105) / ( 5y/ 18) = 8 ⇒ 18 ( x + 105 ) = 40y⇒ 9 ( x + 105 ) = 20y
⇒ 20y -9x = 945 ⇒ 24x - 9x = 945 ⇒ 15x = 945 ⇒ x= 63.
∴ 5y = ( 6 * 63 ) ⇒ y = ( 6 * 63 ) /5 = 378 / 5 = 75.6
Hence, the length of the train is 63 m and its speed is 75.6 km/hr.
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Q 6 - A train 125m long is running at 50 km/ hr. In what time will it pass a man , running at 5 km/hr in the same direction in which the train is going?

A - 22 sec

B - 20 sec

C - 15 sec

D - 10 sec

Answer - D

Explanation

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Speed of the train relative to man = ( 50 - 5 ) km/hr
= ( 45 * 5 / 18) m/sec = 25/2 m/ sec.
Distance covered in passing the man = 125m.
∴ Time taken = 125 / ( 25/2) sec = ( 125 * 2 / 25) sec = 10 sec.
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Q 7 - A train 110 m long is running at 60 km / hr. In what time will it pass a man, running in the direction opposite to that of the train at 6 km/hr?

A - 9 sec

B - 8 sec

C - 7 sec

D - 6 sec

Answer - D

Explanation

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Speed of the train relative to man = ( 60 + 6 km/hr = 66 km/hr
= ( 66 * 15 / 18 ) m/sec = 55/3 m/sec.
Distance covered in passing the man = 110m.
Time taken = 110//( 55/3) sec = ( 110 * 3 / 55 ) sec = 6 sec.
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Q 8 - A train 100m long takes 9 seconds to cross a man walking at 5 km/hr in the direction opposite to that of the train. Find the speed of the train.

A - 55 km/hr

B - 45 km/hr

C - 25 km/hr

D - 35 km/hr

Answer - D

Explanation

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Let the speed of the train be x km/hr.
Relative speed = ( x + 5 ) km /hr = 5 ( x+ 5 ) / 18 m/sec.
Distance covered in passing the man = 100m.
∴ 100/ 5 ( x+5) / 18 = 9 ⇒ 45 ( x+ 5) = 1800 ⇒ x + 5 = 40 ⇒ x = 35.
Speed of the train = 35 km/hr.
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Q 9 - Two train 128 m and 132m long are running towards each other on parallel lines at 42 km/hr and 30 km / hr respectively . In what time will they be clear of each other from the moment they meet?

A - 13 sec

B - 14 sec

C - 15 sec

D - 16 sec

Answer - A

Explanation

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Relative speed = ( 42 + 30 ) km/hr = 72 km/hr
= ( 72 * 5 / 18 ) m/sec = 20 m / sec.
Distance covered in passing each other =  ( 128 + 132) m = 260m.
∴ Required time = 260 / 20 sec= 13 sec.
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