Worksheet: Kinematics Part 2 - t $v_{final} = v_{initial} + at$

NAME:

1. Read the following problem
2. Highlight your “proof” for assigning variables
3. List the givens
4. Solve
5. Write your answer with the proper units

The velocity of a train is 15.2 m/s. At an average acceleration of - 0.188 m/s^2, how much time is required for the train to decrease its velocity to 5.14 m/s? - 3 pts -
● Initial velocity - m/s, starting from rest, initially/beginning, how fast... ● Final velocity - m/s, comes to a stop/rest, finally/end, how fast... ● Acceleration - m/s^2 ● Time - s, how long...

Givens	Work

Answer

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A car comes to a complete stop at a stop sign and then starts to accelerate at 4.30 m/s^2. How long does it take for the car to reach a speed of 12.0 m/s? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration - m/s^2
- Time - s, how long...

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A corvette can accelerate during high speeds at about 2.0 m/s^2 . At this rate how long does it take the car to accelerate from 25.6 m/s to 47.8 m/s? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration - m/s^2
- Time - s, how long...

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John Doe gets off the highway in his 1967 Shelby 427 Cobra. Starting from a speed of 35 m/s and decelerating at a rate of 7.4 m/s^2 how long did it take him to come to a complete stop? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
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An engineer must design a runway to accommodate airplanes that must reach at a ground speed of +61 m/s before they can take off. These planes are capable of being accelerated uniformly at the rate of +2.5 m/s^2. How long will it take the places to reach takeoff speed? - 3 pts -

- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Final velocity - m/s, comes to a stop/rest, finally/end, how fast...
- Acceleration - m/s^2
- Time - s, how long...

Givens	Work

Answer

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A dog is walking at .500 m/s and sees a squirrel and accelerates at 1.56 m/s^2 to a final velocity of 3.08 m/s. How long did the dog’s acceleration last? - 3 pts -
● Initial velocity - m/s, starting from rest, initially/beginning, how fast... ● Final velocity - m/s, comes to a stop/rest, finally/end, how fast... ● Acceleration - m/s^2 ● Time - s, how long...

Givens	Work

Answer