

Worksheet: Kinematics Part 1 - t

$$x = v_{\text{initial}} t + \frac{1}{2} a t^2$$

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

From her bedroom window a girl drops a water balloon to the ground, 3.30 m below. If the balloon is released from rest, how long is it in the air? - 3 pts -

- Displacement - m, how far
- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Acceleration - m/s²
- Time - s, how long...

Givens

Work

Answer

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A feather is dropped on the moon from a height of 1.40 meters. The acceleration of gravity on the moon is 1.67 m/s^2 . Determine the time for the feather to fall to the surface of the moon. - 3 pts -

- Displacement - m, how far
- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Acceleration - m/s^2
- Time - s, how long...

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The observation deck of tall skyscraper 370 m above the street. Ignoring air resistance, determine the time required for a penny to free fall from the deck to the street below. - 3 pts -

- Displacement - m, how far
- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Acceleration - m/s^2
- Time - s, how long...

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Juliet is dropping a rose down to Romeo from her balcony 5.6 meters from the ground. How long will it take for the rose to reach Romeo? - 3 pts -

- Displacement - m, how far
- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Acceleration - m/s²
- Time - s, how long...

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The acceleration due to gravity on Jupiter is about 25 m/s^2 . How long would it take for an object to fall a distance of 3.0 meters? - 3 pts -

- Displacement - m, how far
- Initial velocity - m/s, starting from rest, initially/beginning, how fast...
- Acceleration - m/s^2
- Time - s, how long...

Givens

Work

Answer