



Motion and Energy Test

Review Questions



Show Your Work: 1) Write formula; 2) plug-in values; 3) correct answer with units.
(Round answers to second place past decimal.)

Formulas:

$$\text{Velocity} = \text{Distance} / \text{Time}$$

$$\text{Acceleration} = \frac{\text{Final Velocity} - \text{Initial Velocity}}{\text{Time}}$$

$$\text{Kinetic energy} = \frac{1}{2} \times \text{Mass} \times \text{Speed}^2$$

1. Lucas leaves his house to go to Jorge's house. He walks 0.2 km East on Elm street in about 4 minutes. He turns South on Ash Street and walks 0.15 km in 3 minutes until he turns East on Oak Street. He now walks 2.1 Km for 7 minutes and finally sees Jorge flying a kite in his front yard.

Average velocity of Lucas = _____

_____ Street is probably a hill.

2. Jessica ran to catch up with her friend, Gaby. She ran 735 meters at 3.6 m/sec. How long did it take Jessica to reach Gaby?

Time is _____

3. Nicholas was skiing 8.6 km/hr, 20 minutes later he passed the lodge at a speed of 18.8 km/hr. What was Nicholas's speed as he passed the lodge?

Nicholas' acceleration is _____

4. Johnny was skate boarding at 13 km/hr when he reached the down-hill street. After 40 seconds, Johnny was skating 29 km/hr. What was Johnny's acceleration?

Johnny's acceleration is _____

- 5, (potential energy problem - later!)