

*Converting Between SI & Imperial Measurement*

## Show You Know

<p>Ex. 1</p> <p>Swimmer Brian Johns of Richmond, BC, represented Canada at the 2008 Olympics in Beijing. He finished 7th in a race that one news report referred to as 400 m long and another news report referred to as <math>\frac{1}{4}</math> mi. Are the two measurements equivalent? If not, which distance do you think is more accurate? Justify your reasoning.</p>	<p>Ex. 2</p> <p>a) How many paving stones measuring <math>7\frac{1}{2}</math> in. by <math>7\frac{1}{2}</math> in. are needed to cover an area that is 1 yd by 1 yd?</p> <p>b) To tile a floor that is 3 m by 4 m, how many tiles measuring 30 cm by 50 cm would you buy? Add 10% extra tiles for areas that require tiles to be cut.</p>	<p>Ex. 3</p> <p>a) Use the diagram from Example 3., determine the difference between the reaction-time distances for speeds of 110 km/h and 120 km/h. Express your answer in feet.</p> <p>b) Convert 90 km/h into miles per hour. What is the approximate stopping distance for a vehicle traveling at this speed? Express your answer in yards.</p>
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## Practice

1. Convert each measurement to the unit specified.
  - a. The average growth rate for a teenage boy can be as high as  $4\frac{1}{4}$  in. per year. (millimeter)
  - b. The official distance of a marathon is 26 mi 385 yds. (hundredth of a kilometer)
  - c. The length of a basketball court is 28.65 m. (tenth of a foot)
  - d. The height of the model Easter Egg in Vegreville, Alberta, is 163.2 in. (tenth of a centimeter)

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2. In a triathlon, competitors swim for 1.5 km, run a distance that is  $6\frac{1}{2}$  times the length of the swim, and ride a bike for a distance that is 4 times the length of the run.
  - a. Compute the length of each part of the triathlon to the nearest tenth of a kilometer.
  
  
  
  
  
  
  
  
  
  
  - b. Compute the length of each part of the triathlon to the nearest tenth of a mile..
  
  
  
  
  
  
  
  
  
  
  - c. What is the total distance of the competition in kilometers? In miles?
  
  
  
  
  
  
  
  
  
  
3. Your cousins from the United States are driving to visit you. The United States uses the imperial system, therefore their speedometer is in mph.
  - a. The speedometer in their vehicle shows that they are traveling at 53 mph along a secondary road. Are they within the speed limit if the posted maximum speed is 80 km/h?
  
  
  
  
  
  
  
  
  
  
  - b. The route your cousins are taking includes a stretch of highway where the maximum speed is 110 km/h. What will their speedometer be if they drive at the limit? (remember, the United States uses the imperial system, so their speedometer would be in mph.)