

# TUTORS: THIS IS A TAKE HOME QUIZ

A 10 foot ladder rests against a wall. The base of the ladder is pulled away from the wall at a rate of 2 feet per minute. How quickly is the area between the ladder, the wall and the ground changing when the ladder is 4 feet from the wall ?

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An SUV and a Hummer are about to collide at an unmarked intersection. The SUV is driving north at 80 mph and is currently 4 miles from the intersection. The Hummer is driving east at 60 mph and is currently 3 miles from the intersection. How quickly is the distance between them changing when the SUV is 1 mile from the intersection ?

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A tank filled with water has the shape of an inverted cone 6 feet across and 8 feet tall. Water is leaking from the cone at 25 cubic feet per minute. How quickly is the water line (the top of the water) falling ?

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The tip of the second hand of a clock is 8 inches from the center of the clock. The clock has a crystal 7 inches from the center, where the "12" would normally be. How quickly is the tip of the second hand approaching the crystal at 9:30:45am ? **(HINT: What rate of change information is implied, but not stated ?)**

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