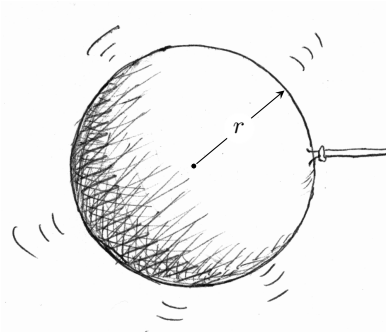
Name: _____

# MATH 200 – Quiz 8 ⊡

I'm in the Thurs11 Thurs12 Thurs1 or Fri10 recitation. (Circle one)

October 24, 2012

**1.** A spherical balloon is inflated at a rate of $100\pi$ cubic feet per minute.




(a) How fast is the radius increasing at the instant that the radius is 5 feet?

(b) How fast is the surface area increasing at the instant that the radius is 5 feet?

(For a sphere of radius $r$ is the volume is $V = \frac{4}{3}\pi r^3$, and the surface area is $S = 4\pi r^2$.)

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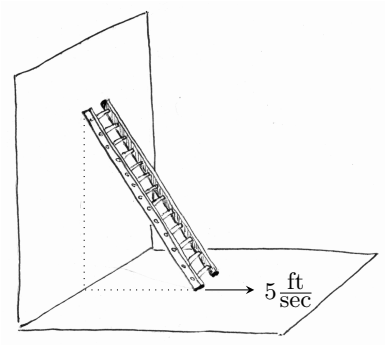
MATH 200 – Quiz 8 ⊡

I'm in the Thurs11 Thurs12 Thurs1 or Fri10 recitation. (Circle one)

October 24, 2012

**1.** A 13-foot ladder is leaning against a wall, as illustrated, when its base begins to slide away from the wall at a rate of 5 feet per second. How fast is the top of the ladder sliding down the wall when the base of the ladder is 12 feet from the wall?



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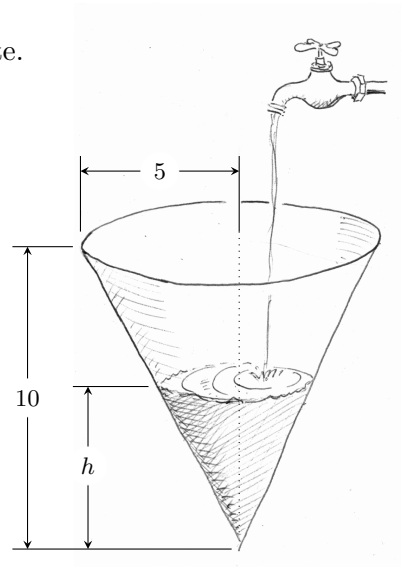
MATH 200 – Quiz 8 ⚀

I'm in the Thurs11 Thurs12 Thurs1 or Fri10 recitation. (Circle one)

October 24, 2012

**1.** Water flows into a conical tank (see illustration) at a rate of 9 cubic feet per minute. How fast is the water level $h$ rising when the water is 6 feet deep?
(The volume of a cone of height $h$ and radius $r$ is $V = \frac{1}{3}\pi r^2 h$.)




Name: _____

MATH 200 – Quiz 8 ⚄

I'm in the Thurs11 Thurs12 Thurs1 or Fri10 recitation. (Circle one)

October 24, 2012

**1.** A 13-foot ladder is leaning against a wall, as illustrated, when its base begins to slide away from the wall at a rate of 5 feet per second. At what rate is the angle $\theta$ changing when the base is 12 feet from the wall?