

- 4) A spherical snowball is rolled in fresh snow, causing it grow at a rate of $\frac{256\pi}{3}$ in³/sec. How fast is the radius of the snowball increasing when the radius is 8 in?
- 5) A 17 ft ladder is leaning against a wall and sliding towards the floor. The foot of the ladder is sliding away from the base of the wall at a rate of 3 ft/sec. How fast is the top of the ladder sliding down the wall when the top of the ladder is 15 ft from the ground?
- 6) A crowd gathers around a movie star, forming a circle. The area taken up by the crowd increases at a rate of 64π ft²/sec. How fast is the radius of the crowd increasing when the radius is 11 ft?

- 7) Oil spilling from a ruptured tanker spreads in a circle on the surface of the ocean. The area of the spill increases at a rate of 25π m²/min. How fast is the radius of the spill increasing when the radius is 5 m?
- 8) A 7 ft tall person is walking away from a 18 ft tall lamppost at a rate of 6 ft/sec. Assume the scenario can be modeled with right triangles. At what rate is the length of the person's shadow changing when the person is 16 ft from the lamppost?
- 9) A spherical balloon is inflated so that its radius increases at a rate of 2 cm/sec. How fast is the volume of the balloon increasing when the radius is 6 cm?
- 10) A spherical snowball melts at a rate of 36π in³/sec. At what rate is the radius of the snowball changing when the radius is 3 in?

- 11) A crowd gathers around a movie star, forming a circle. The radius of the crowd increases at a rate of 7 ft/sec. How fast is the area taken up by the crowd increasing when the radius is 15 ft?
- 12) A spherical snowball melts so that its radius decreases at a rate of 2 in/sec. At what rate is the volume of the snowball changing when the radius is 4 in?
- 13) A spherical balloon is deflated at a rate of 36π cm³/sec. At what rate is the radius of the balloon changing when the radius is 8 cm?
- 14) Water slowly evaporates from a circular shaped puddle. The radius of the puddle decreases at a rate of 6 in/hr. Assuming the puddle retains its circular shape, at what rate is the area of the puddle changing when the radius is 6 in?

- 15) A spherical snowball is rolled in fresh snow, causing it to grow so that its radius increases at a rate of 4 in/sec. How fast is the volume of the snowball increasing when the radius is 3 in?