

Related Rates 1 Circuit

Name:

Block:

Seat:

Directions: Begin in cell #1. Search for your answer. Continue in this manner until you complete the circuit. Additional paper may be necessary! No technology is needed!

Answer: $-\frac{14}{5} \text{ ft/sec}$

1: A spherical balloon is deflated so that its radius decreases at a rate of 4 cm/sec. At what rate is the volume of the balloon changing when the radius is 3 cm?

Answer: $216\pi \text{ cm}^2/\text{min}$

_____: A 13 ft ladder is leaning against a wall and sliding towards the floor. The top of the ladder is sliding down the wall at a rate of 7 ft/sec. How fast is the base of the ladder sliding away from the wall when the base of the ladder is 12 ft from the wall?

Answer: $-144\pi\text{cm}^3/\text{sec}$

#_____ : Water leaking onto a floor forms a circular pool. The radius of the pool increases at a rate of 9 cm/min. How fast is the area of the pool increasing when the radius is 12 cm?

Answer: $\frac{35}{12}\text{ft}/\text{sec}$

#_____ : A 7 ft tall person is walking towards a 17 ft tall lamppost at a rate of 4 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 12 ft from the lamppost?