

Show your work. No calculators, notes or colleagues are allowed!

1. Each side of a square is increasing at a rate of 3 cm/sec. At what rate is the area of the square increasing when the area is 16 cm²?

2. A plane flying horizontally at an altitude of 1 mile and a speed of 100 mph passes directly over a radio station. Find the rate at which the distance from the plane to the radio station is increasing when it is 2 miles from the station.

Turn Page Over...

3. A street light is mounted at the top of a pole 4 meters high. A woman 2 meters tall is walking away from the street light at a rate of 2 m/sec. How fast is the tip of her shadow moving when she is 5 meters from the pole?