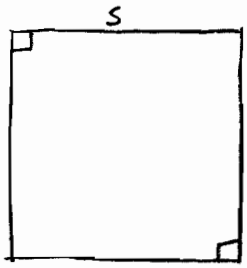
Quiz 9 | Name: Answer Key

3-0235 — 50 SHEETS — 5 SQUARES
3-0236 — 100 SHEETS — 5 SQUARES
3-0237 — 200 SHEETS — 5 SQUARES
3-0137 — 200 SHEETS — FILLER
COMET

Each side of a square is increasing at 7 cm/s. At what rate is the area of the square increasing when the area is 16 cm²?



a) what is known? $\frac{ds}{dt} = 7\text{ cm/s}$

b) what do you need to find? $\frac{dA}{dt}$ when $A = 16\text{cm}^2$

c) Relationship? $A = s^2$

d) At what rate is the area increasing when area is 16 cm²?
$56\text{ cm}^2/\text{s}$.

$$A = s^2$$

$$\frac{dA}{dt} = 2s\frac{ds}{dt}$$

when $A = 16\text{cm}^2$, $s = 4\text{ cm}$. $\frac{ds}{dt} = 7\text{ cm/sec}$

$$\frac{dA}{dt} = 2 \cdot 4\text{ cm} \cdot 7\text{ cm/sec}$$

$$\frac{dA}{dt} = 56\text{ cm}^2/\text{sec}$$