

Answers to Worksheet on Related Rates

1.  $\frac{12}{\sqrt{10}}$

2.  $-\frac{1}{10}$  radians per second

3. (a)  $\frac{25}{3}$  feet per second

(b)  $\frac{10}{3}$  feet per second

4. (a) 20 square centimeters per second

(b) 0 centimeters per second

(c)  $-\frac{10}{\sqrt{37}}$  centimeters per second

5.  $\frac{8}{405\pi}$  feet per minute

6.  $\frac{9}{10\pi}$  feet per minute

7.  $-\frac{1}{18\pi}$  centimeters per second

8.  $\frac{5}{18\pi}$  inches per minute

9.  $\frac{8}{3}$  feet per second

10.  $\frac{32}{25\pi}$  centimeters per second

11.  $32\pi$  cubic centimeters per second

12. 40 cubic feet per hour