

Pre-Calc AB Worksheet #51 : Answers

1. (a) $V(x) = x^2 - 12x + 32$

(b) $x > 8$

(c) 8 inches by 20 inches

2. $A(x) = 300x - 6x^2$

Large area: 50 m by 50 m,

Small area: 25 m by 50 m

3. (a) $A = \frac{C^2}{4\pi}$

(b) $V = \frac{\sqrt{S^3}}{6\sqrt{\pi}}$

4. (a) $\theta_1 = \arctan\left(\frac{85t}{0.2}\right)$

$$\theta_2 = \arctan\left(\frac{80t}{0.25}\right)$$

(b) The cars will collide after $\frac{120}{11} \approx 10.9$ seconds.
 $\theta_1 \approx 52.17^\circ$ and $\theta_2 \approx 44.12^\circ$

(c) No, because it would not happen until approximately 18.8 seconds.

5. (a) Approximately 19.2 hours.

(b) Approximately 84.3 ppm of carbon monoxide.