

Answers wir 5 Review Problems

- $\theta = 172^\circ$ (approximately)
- $x = 12 + 14t, y = 3 + 4t$
- Graph is the parabola $x = y^2$;
Tangent vector: $\langle 4, 1 \rangle$, Unit tangent: $\left\langle \frac{4}{\sqrt{17}}, \frac{1}{\sqrt{17}} \right\rangle$
- approximately 41°
- a.) $v(t) = 12t^2 - 30t + 12$,
 $a(t) = 24t - 30$
b.) $a(1/2) = -18 \text{ ft/s}^2, a(2) = 18 \text{ ft/s}^2$
- $\frac{81}{8}$
- $-2^{83} \cos 2x$
- position: $\langle 0, -1 \rangle$
velocity: $\langle -2, 0 \rangle$; speed: 2;
acceleration: $\langle 0, 4 \rangle$
The graph is the circle $x^2 + y^2 = 1$
- a.) $y = 2$
b.) Horizontal: $(-4, 2)$ and $(-2, -2)$; Vertical: $(0, 0)$ and $(-4, 2)$
- $m = \frac{6}{7}$
- $250\sqrt{3}$ km/hr
- $\frac{1}{8\pi}$ cm/min
- The area is increasing at a rate of 1 square foot/second
- 7.5 cubic inches/second
- $\frac{\sqrt{2}}{5}$ radians/second