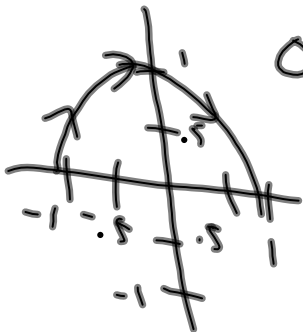Sketch a graph of the parametric equations. Then write the corresponding rectangular equation.

$x = -\cos t \Rightarrow \cos t = \dfrac{x}{-1}$ $\cos^2 t = x^2$

$y = \sin^2 t$

$0° \leq t \leq 180°$

$\sin^2\theta + \cos^2\theta = 1$

$y + x^2 = 1$

$y = -x^2 + 1$

9-5 (cont.)   Parametric Equations

Ex 1   Write parametric equations for the following rectangular equation.

$y = 3x + 4$

$x = t$

$y = 3t + 4$

Ex 2   Write parametric equations for the following rectangular equation.

$y = 3(x - 2)^2 + 7$

$x = t$

$y = 3(t - 2)^2 + 7$

$x = t + 2$

$y = 3(t)^2 + 7$

Ex 3   Write parametric equations for the following rectangular equation.

$$x^2 + y^2 = 25$$
$$\frac{}{25} \frac{}{25} \frac{}{25}$$

$$\cos^2\theta + \sin^2\theta = 1$$

$$\frac{x^2}{25} + \frac{y^2}{25} = 1$$

$$\frac{x^2}{25} = \cos^2\theta$$

$$\frac{y^2}{25} = \sin^2\theta$$

$$5\cos\theta = x$$

$$5\sin\theta = y$$

Ex 4   Write parametric equations for the following rectangular equation.

$$y = \frac{1}{2x}$$

$$x = t$$
$$y = \frac{1}{2t}$$

$$x = .5t$$
$$y = \frac{1}{t}$$

Homework
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