MAC1114 Trigonometry
10.5 Parametric Equations Practice 18

Eliminate the parameter t. Find a rectangular equation for the plane curve defined by the parametric equations.

1) $x = 2t, y = t + 1;\ -2 \le t \le 3$ 1) _____

A) $y = \frac{1}{2}x - 1;\ -\infty < x < \infty$

B) $y = -2x + 1;\ -\infty < x < \infty$

C) $y = x^2 + 1;\ -2 \le x \le 2$

D) $y = \frac{1}{2}x + 1;\ -4 \le x \le 6$

2) $x = 2t - 1, y = t^2 + 3;\ -4 \le t \le 4$ 2) _____

A) $y = -\frac{1}{2}x + 30;\ -6 \le x \le 4$

B) $y = \frac{1}{4}x^2 + \frac{1}{2}x + \frac{13}{4};\ -9 \le x \le 7$

C) $y = x^2 + 1;\ -2 \le x \le 2$

D) $y = \frac{1}{2}x^2 + 1;\ -6 \le x \le 4$

3) $x = 6 \cos t, y = 6 \sin t;\ 0 \le t \le 2\pi$ 3) _____

A) $y = x^2 - 9;\ -2 \le x \le 2$

B) $y^2 - x^2 = 36;\ -\infty < x < \infty$

C) $x^2 + y^2 = 36;\ -6 \le x \le 6$

D) $y = \sqrt{a^2 - x^2} = 36;\ -\infty < x < \infty$

4) $x = 2 + \sec t, y = 5 + 2 \tan t;\ 0 < t < \frac{\pi}{2}$ 4) _____

A) $(x - 2)^2 + \frac{(y - 5)^2}{4} = 1;\ 1 \le x \le 3$

B) $(x - 2)^2 - (y - 5)^2 = 4;\ -\infty < x < \infty$

C) $(y - 2)^2 - \frac{(x - 5)^2}{4} = 1;\ -\infty < x < \infty$

D) $(x - 2)^2 - \frac{(y - 5)^2}{4} = 1;\ x > 3$

Eliminate the parameter. Write the resulting equation in standard form.

5) A circle: $x = 2 + 5 \cos t, y = 5 + 5 \sin t$ 5) _____

A) $\frac{(x - 5)^2}{25} + \frac{(y - 2)^2}{25} = 1$

B) $\frac{(x - 2)^2}{25} + \frac{(y - 5)^2}{25} = 1$

C) $\frac{(x + 2)^2}{25} + \frac{(y + 5)^2}{25} = 1$

D) $(x - 2)^2 + (y - 5)^2 = 25$

Find a set of parametric equations for the conic section or the line.

6) Circle: Center: (2, 3); Radius: 2 6) _____

A) $x = 2 + 2 \cos t;\ y = 3 + 2 \sin t$

B) $x = t - 2;\ (y - 3)^2 + t^2 = 4$

C) $x = 2 + \sin t;\ y = 3 + \cos t$

D) $x = 3 + 2 \sin t;\ y = 2 + 2 \cos t$

Find a set of parametric equations for the rectangular equation.

7) $y = 4x - 3$ 7) _____

A) $x = \frac{t}{4};\ y = t - \frac{3}{4}$

B) $x = t;\ y = 4t^2 - 3$

C) $x = t;\ y = 4t - 3$

D) $y = 4t;\ 4x = t + 3$

Answer Key
Testname: PRACTICE18

1) D
2) B
3) C
4) D
5) B
6) A
7) C