WebAssign
Hw 32 (10.2): Calculus with Parametric Curves (Homework)

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MA 162 Spring 2012, section 321, Spring 2012
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Current Score : 20 / 20 **Due :** Tuesday, April 17 2012 11:55 PM EDT

1. 2/2 points | Previous Answers SCalcET7 10.2.001.

Find dy/dx.

$$x = t\sin t, \quad y = t^2 + 6t$$

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2. 2/2 points | Previous Answers SCalcET7 10.2.002.

Find dy/dx.

$$x = 2/t, \quad y = \sqrt{t}\, e^{-t}$$

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3. 2/2 points | Previous Answers SCalcET7 10.2.004.

Find an equation of the tangent to the curve at the point corresponding to the given value of the parameter.

$$x = t - t^{-1}, \quad y = 3 + t^2, \quad t = 1$$

$y =$

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4. 2/2 points | Previous Answers SCalcET7 10.2.005.

Find an equation of the tangent to the curve at the point corresponding to the given value of the parameter.

$x = t \cos t, \quad y = t \sin t; \quad t = \pi$

$y =$ ✔

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5. 2/2 points | Previous Answers SCalcET7 10.2.013.

Find dy/dx and d^2y/dx^2.

$x = e^t, \quad y = te^{-t}$

$\frac{dy}{dx} =$ ✔

$\frac{d^2y}{dx^2} =$ ✔

For which values of t is the curve concave upward? (Enter your answer using interval notation.)

✔

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6. 2/2 points | Previous Answers SCalcET7 10.2.015.

Find dy/dx and d^2y/dx^2.

$x = 4 \sin t, \quad y = 5 \cos t, \quad 0 < t < 2\pi$

$\frac{dy}{dx} =$ ✔

$\frac{d^2y}{dx^2} =$ ✔

For which values of t is the curve concave upward? (Enter your answer using interval notation.)

✔

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7. 2/2 points | Previous Answers SCalcET7 10.2.039.

Consider the following

$x = t - 2 \sin t, \quad y = 1 - 2 \cos t, \quad 0 \le t \le 3\pi$

Set up an integral that represents the length of the curve.

$\int_0^{3\pi}$ ✔ dt

Use your calculator to find the length correct to four decimal places.

20.0473 ✔

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8. 2/2 points | Previous Answers SCalcET7 10.2.041.

Find the exact length of the curve.

$x = 4 + 9t^2, \quad y = 5 + 6t^3, \quad 0 \le t \le 5$

✔

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9. 2/2 points | Previous Answers SCalcET7 10.2.042.MI.

Find the exact length of the curve.

$x = e^t + e^{-t}, \quad y = 5 - 2t, \quad 0 \le t \le 4$

✔

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10. 2/2 points | Previous Answers SCalcET7 10.2.051.

Find the distance traveled by a particle with position (x, y) as t varies in the given time interval.

$x = 5\sin^2 t, \quad y = 5\cos^2 t, \quad 0 \le t \le 4\pi$

✔

What is the length of the curve?

✔

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