Web**Assign**

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

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MA 162 Spring 2012, section 321, Spring 2012

Instructor: Jonathan Montano

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.

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



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2. 2/2 points | Previous Answers

SCalcET7 10.2.002.

Find dy/dx.

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



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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.

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

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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.

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

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5. 2/2 points | Previous Answers

SCalcET7 10.2.013.

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

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

$$\frac{dy}{dx} = \sqrt{2}$$

$$\frac{dy}{dx} = \checkmark$$

$$\frac{d^2y}{dx^2} = \checkmark$$

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 .

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

$$\frac{dy}{dx} = \checkmark$$

$$\frac{d^2y}{dx^2} = \checkmark$$

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.

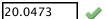
Consider the following

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

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

$$\int_0^{3\pi} \checkmark dt$$

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



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8. 2/2 points | Previous Answers

SCalcET7 10.2.041.

Find the exact length of the curve.

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



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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.

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



What is the length of the curve?







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