This print-out should have 6 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

**001 10.0 points**

Determine $A$ so that the curve

$$y = 3x + 5$$

can be written in parametric form as

$$x(t) = t - 2\,, \quad y(t) = At - 1\,.$$

**1.** $A = 4$

**2.** $A = 5$

**3.** $A = -4$

**4.** $A = -3$

**5.** $A = 3$

**6.** $A = -5$

**002 10.0 points**

Determine a Cartesian equation for the curve given in parametric form by

$$x(t) = 4\ln(4t)\,, \quad y(t) = \sqrt{t}\,.$$

**1.** $y = \frac{1}{2}e^{x/8}$

**2.** $y = \frac{1}{4}e^{x/4}$

**3.** $y = \frac{1}{2}e^{x/4}$

**4.** $y = \frac{1}{4}e^{4/x}$

**5.** $y = \frac{1}{2}e^{8/x}$

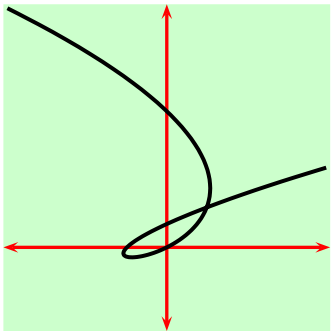
**6.** $y = \frac{1}{4}e^{x/2}$

**003 10.0 points**

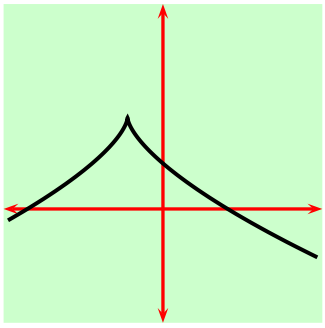
Which one of the following could be the graph of the curve given parametrically by

$$x(t) = t + \sin 2t\,, \quad y(t) = t + \sin 3t\,?$$

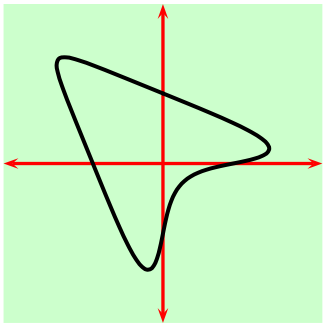
**1.**



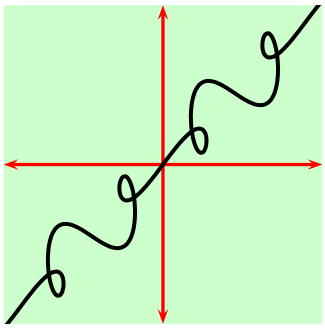
**2.**



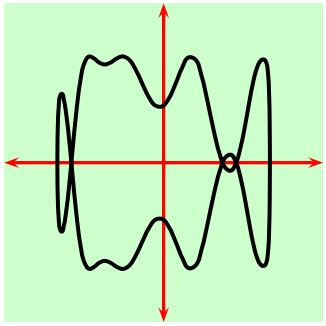
**3.**



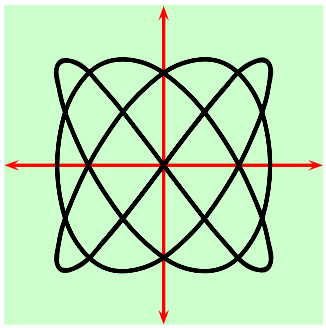
**4.**



**5.**



**6.**



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**004 10.0 points**

Determine a Cartesian equation for the curve given in parametric form by

$$x(t) = 4e^{t}, \quad y(t) = 3e^{-2t}.$$

**1.** $xy^2 = 12$

**2.** $\dfrac{x}{y^2} = 12$

**3.** $\dfrac{x^2}{y} = 36$

**4.** $x^2y = 48$

**5.** $\dfrac{x^2}{y} = 48$

**6.** $x^2y = 36$

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**005 10.0 points**

Find a Cartesian equation for the curve given in parametric form by

$$x(t) = 2\cos 4t, \quad y(t) = 5\sin 4t.$$

**1.** $25x^2 - 4y^2 = 100$

**2.** $4x^2 + 25y^2 = 100$

**3.** $\dfrac{x^2}{25} - \dfrac{y^2}{4} = \dfrac{1}{100}$

**4.** $\dfrac{x^2}{4} - \dfrac{y^2}{25} = \dfrac{1}{100}$

**5.** $25x^2 + 4y^2 = 100$

**6.** $\dfrac{x^2}{25} + \dfrac{y^2}{4} = \dfrac{1}{100}$

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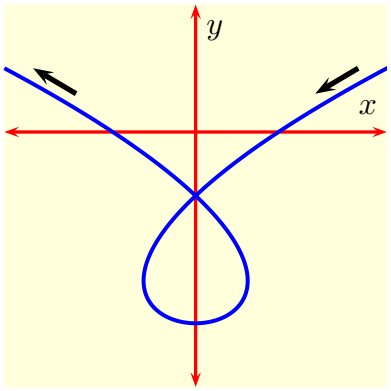
**006 10.0 points**

Which one of the following could be the graph of the curve given parametrically by

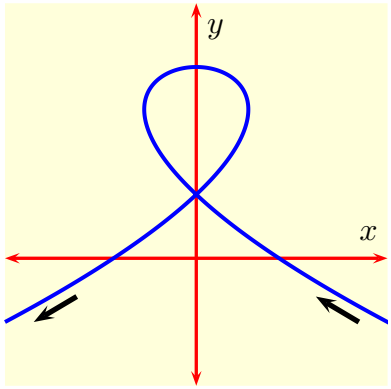
$$x(t) = t^2 - 3, \qquad y(t) = t^3 - 2t,$$

where the arrows indicate the direction of increasing $t$?

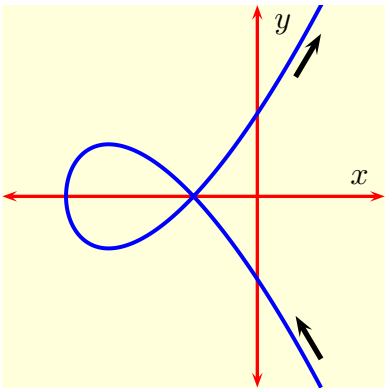
**1.**



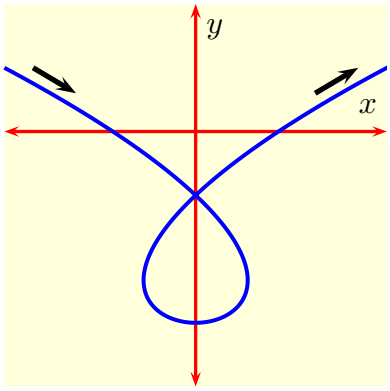

**2.**



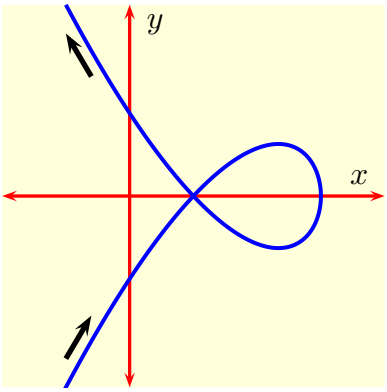
**3.**




**4.**




**5.**




**6.**