

Quiz 10.1-10.3
 2 points each. No calculator
 Show work on separate paper.

12 pts.

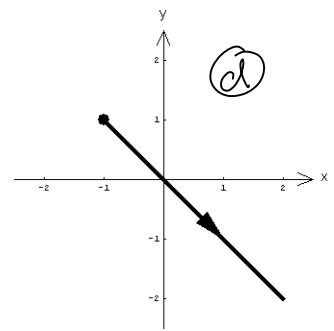
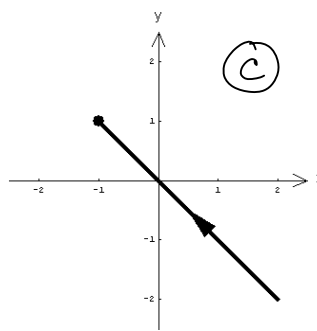
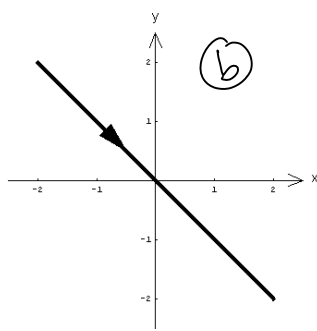
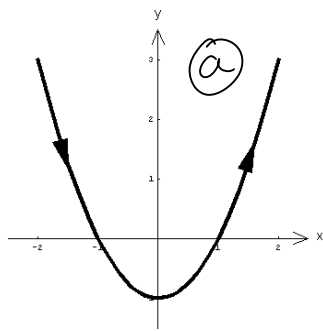
Name: _____

Per: _____

① Find the arc length of the curve: $x = t^2$, $y = 2t^2 + 1$, $1 \leq t \leq 3$.

- Ⓐ $16\sqrt{5}$ Ⓑ 40 Ⓒ 24 Ⓓ $8\sqrt{5}$ Ⓔ None of these

② Graph the curve given by the parametric equations
 $x = t^2 - 1$ and $y = 1 - t^2$. Ⓔ None of these



③ Find the corresponding rectangular equation by eliminating the parameter. $x = t^2 + 2$, $y = t^2 - 1$

- Ⓐ $x + y = 1$ Ⓑ $y = x + 1$ Ⓒ $x = y + 1$ Ⓓ $y = x - 3$ Ⓔ None of these

④ Find $\frac{d^2y}{dx^2}$ if $x = 2\cos\theta$, $y = \sin\theta$.

- Ⓐ $-\frac{1}{4}\csc^3\theta$ Ⓑ $\frac{1}{2}\csc^2\theta$ Ⓒ $-2\sec^2\theta$ Ⓓ $\frac{1}{2}\cot\theta\csc\theta$ Ⓔ None of these

⑤ Convert the rectangular equation $x^2 + y^2 - 2y = 0$ to polar form.

- Ⓐ $r = 2\cos\theta$ Ⓑ $r = \frac{1}{2}\csc\theta$ Ⓒ $r = 2\sin\theta$ Ⓓ $r = -2\sin\theta$ Ⓔ None of these

⑥ Find $\frac{dy}{dx}$ if $x = \sqrt{t}$ and $y = (t-1)^3$

- Ⓐ $3(t-1)^2$ Ⓑ $\frac{1}{6\sqrt{t}(t-1)^2}$ Ⓒ $\frac{6(t-1)^2}{\sqrt{t}}$ Ⓓ $6\sqrt{t}(t-1)^2$ Ⓔ None of these