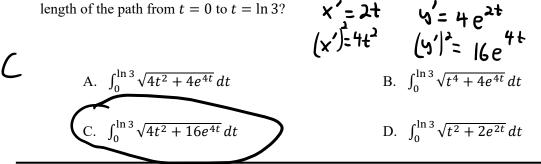


6. If a curved is described by the parametric equations  $x = t^2$  and  $y = 2e^{2t}$ , then which of the following gives the length of the path from t = 0 to  $t = \ln 3$ ? x' = 2t  $u' - u_{0} = t$ 

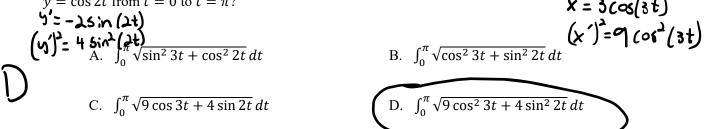


7. Which of the following gives the length of the path described by the parametric equations x = 2 + 4t and  $y = 3 + t^2$  from t = 0 to t = 1? y' = 2t $(x')^2 = 16$ 

$$\begin{array}{c} \text{A. } \int_{0}^{1} \sqrt{4+2t} \, dt \\ \text{C. } \int_{0}^{1} \sqrt{16t^{2}+t^{4}} \, dt \end{array} \\ \end{array} \qquad \begin{array}{c} \text{B. } \int_{0}^{1} \sqrt{(2+4t)^{2}+(3+t^{2})^{2}} \, dt \\ \text{D. } \int_{0}^{1} \sqrt{16+4t^{2}} \, dt \end{array}$$

8. Which of the following gives the length of the path described by the parametric equations  $x = \cos t^3$  and  $y = e^{5t}$  from t = 0 to  $t = \pi$ ?  $4 = 5e^{5t}$   $(4)^3 = 5e^{5t}$   $(4)^3 = 5e^{5t}$   $(4)^3 = 5e^{5t}$   $(5)^3 = 9t^4 \sin^2(t^3) + 25e^{10t} dt$   $(5)^n \sqrt{9t^4 \sin^2(t^3) + 25e^{5t}} dt$   $(5)^n \sqrt{9t^4 \sin^2(t^3) + 25e^{5t}} dt$  $(5)^n \sqrt{(5)^2 + (e^{5t})^2} dt$ 

9. Which of the following gives the length of the path described by the parametric equations  $x = \sin 3t$  and  $y = \cos 2t$  from t = 0 to  $t = \pi$ ?



10. Which of the following gives the length of the path described by the parametric equations  $x = \sqrt{t}$  and y = 3t - 1 from  $0 \le t \le 1$ ? (y) = 1A.  $\int_0^1 \sqrt{\frac{t}{4} + 9} dt$ C.  $\int_0^1 \sqrt{\frac{1}{4}t + 3} dt$ D.  $\int_0^1 \sqrt{\frac{1}{2}t^{-\frac{1}{2}} + 3} dt$ 

No test prep. Problems 6-10 are great examples of problems you may see on the AP Exam.