Name: Richard

QUIZ 15 ♠

MATH 201
March 19, 2024

1. Consider the parametric curve $x = t\cos(t),\ y = t\sin(t)$. Find $\frac{dy}{dx}$.

$$\frac{dy}{dx} = \frac{dy/dt}{dx/dt} = \boxed{\frac{\sin(t) + t\cos(t)}{\cos(t) - t\sin(t)}}$$

Name: Richard

QUIZ 15 ♢

MATH 201
March 19, 2024

1. Consider the parametric curve $x = t^2 + t,\ y = t\ln(t)$. Find $\frac{dy}{dx}$.

$$\frac{dy}{dx} = \frac{dy/dt}{dx/dt} = \frac{\ln(t) + t\frac{1}{t}}{2t+1} = \boxed{\frac{\ln(t)+1}{2t+1}}$$

Name: Richard

QUIZ 15 ♣

MATH 201
March 19, 2024

1. Consider the parametric curve $x = \sin(t),\ y = \cos(e^t)$. Find $\frac{dy}{dx}$.

$$\frac{dy}{dx} = \frac{dy/dt}{dx/dt} = \boxed{\frac{-\sin(e^t)e^t}{\cos(t)}}$$

Name: Richard

QUIZ 15 ♡

MATH 201
March 19, 2024

1. Consider the parametric curve $x = t + \cos(t),\ y = \sin(e^t)$. Find $\frac{dy}{dx}$.

$$\frac{dy}{dx} = \frac{dy/dt}{dx/dt} = \boxed{\frac{\cos(e^t)e^t}{1-\sin(t)}}$$