

11/15/19

use implicit differentiation to find $\frac{dy}{dx}$ in terms of x and y .

$$x^3 + y^3 = 1$$

$$3x^2 + 3y^2 \frac{dy}{dx} = 0$$

$$\frac{3y^2 \frac{dy}{dx}}{3y^2} = -\frac{3x^2}{3y^2}$$

$$= -\frac{x^2}{y^2}$$

$$y^3(2x) - (-x^2) \frac{dy}{dx}$$

$$\frac{-2xy^2 + 2x^2y \frac{dy}{dx}}{y^4}$$

$$y \left(\frac{-2xy^2}{y^4} - \frac{2x^2y}{y^4} \right)$$

$$\frac{-2xy - 2x^2}{y^3} \rightarrow -2x \left(\frac{y^3 + x^3}{y^3} \right) \rightarrow -\frac{2x}{y^3}$$

Nov 13-9:17 AM

<p>Ans: $2x + 4$</p> <p># _____</p> <p>Find $\frac{dy}{dx}$. $y = x \tan x$</p> <p>$\frac{dy}{dx} = ?$</p>	<p>Ans: $\frac{2-2xy}{x^2+1}$</p> <p># _____</p> <p>$f(x) = \tan x \cos x$</p> <p>$f(x) = \frac{\sin x \cdot \cos x}{\cos x}$</p> <p>$f(x) = \sin x$</p> <p>$f'(x) = \cos x$</p> <p>$f'(x) = ?$</p>
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Nov 15-8:14 AM

<p>Ans: 3</p> <p># _____</p> <p>A student is finding the derivative by the limit process. The student is using</p> $f'(x) = \lim_{h \rightarrow 0} \frac{(x+h)^2 + 3(x+h) - 4 - x^2 - 3x + 4}{h}$ $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ $\frac{x^2 + 3x - 4}{x^2 + 3x - 4}$ <p>If the original function is $f(x) = ax^2 + bx + c$, what is the value of c?</p>	<p>Ans: 6</p> <p># _____</p> <p>Find $\frac{dy}{dx}$. $y = \frac{2x^2 + 4x}{x}$</p> $y = 2x + 4$ $y' = 2$ <p>$\frac{dy}{dx} = ?$</p>
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Nov 15-8:15 AM

<p>Ans: $\tan x + x \sec^2 x$</p> <p># _____</p> <p>Find $\frac{dy}{dx}$. $x^2y + y = 3x$</p> <p>$\frac{dy}{dx} = ?$</p>	<p>Ans: $\sin x + x \cos x$</p> <p># _____</p> <p>Find $\frac{dy}{dx}$. $xy = \cos x$</p> $x \frac{dy}{dx} + y = -\sin x$ $x \frac{dy}{dx} = \frac{-\sin x - y}{x}$ <p>$\frac{dy}{dx} = ?$</p>
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Nov 15-8:15 AM