← Chain rule practice

Practice Quiz, 3 questions

✓ Congratulations! You passed!

Next Item

4.29 / 5 points

1.

Consider the function $h:\mathbb{R} o\mathbb{R}$, where $h(t)=(f\circ g)(t)=f(g(t))$ with

$$g(t) = \mathbf{x} = egin{bmatrix} t\cos t \ t\sin t \end{bmatrix} \,, \quad t \in \mathbb{R}$$

$$f(\mathbf{x}) = \exp(x_1 x_2^2)\,, \quad \mathbf{x} = egin{bmatrix} x_1 \ x_2 \end{bmatrix} \in \mathbb{R}^2$$

 $\frac{dg}{dt} = \frac{\left[\cos t - t\sin t\right]}{\sin t + t\cos t}$

Correct

Well done

This should be selected

Un-selected is correct

 $\frac{dg}{dt} = \begin{bmatrix} \sin t - t \cos t \\ \cos t + t \sin t \end{bmatrix}$

Un-selected is correct

Un-selected is correct

Correct

Yes, this is a row vector.

Correct

Yes, this is what we get when we apply the chain-rule. Well done!



1/1 points

Compute $\frac{df}{dr}$ of the following function using the chain rule. Chain rule practice

Practice Quiz, 3 questions

 $a=x^2$

 $b = \exp(a)$

c = a + b

 $d = \log(c)$

 $e = \sin(c)$

f = d + e

 $\frac{df}{dx} = \frac{\left(1 + \cos(x^2 + \exp(x^2))(x^2 + \exp(x^2))\right)(2x + 2x\exp(x^2))}{x^2}$

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Correct

Excellent!

 $\frac{df}{dx} = \frac{\left(1 + \cos(x^2 + \exp(x^2))(x^2 + \exp(x^2))\right)(2x + 2x\exp(x^2))}{x^2 + \exp(x^2) + \log(x^3)}$

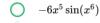


1/1 points

What is $rac{df}{dx}$ where

 $f = \cos(t^2)$

 $t=x^3$



Correct

Well done!

- $-6x\sin(x^6)$
- $6x^5\sin(x^6)$
- $-\sin(x^6)$





