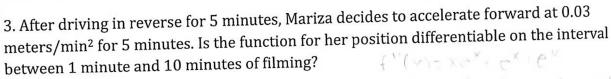
Mu A Individual

1. What is
$$f'(0)$$
 if $f(x) = \begin{cases} e^x, & x \le 0 \\ e^{-x}, & x > 0 \end{cases}$?

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straight track. She drives in reverse for the first five minutes of filming. Her position is represented by the function: $S(t) = -0.005t^3$ where t is minutes after filming begins, and S is her position in meters. What is Mariza's speed after 2 minutes of filming?



4. Find $d^6/dx^6 f(x)$ if $f(x) = xe^x$. $f'(y) \in X \in A$

5. The absolute value of f'(x) is $12x^3$. What are two of the possible functions of f(x) if the y -intercept of f(x) is 2? (0,7)

6. Find

$$\lim_{h \to 0} \frac{\cos\left(\frac{\pi}{3} + h\right) - \frac{1}{2}}{h}$$

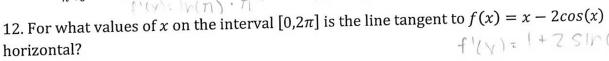
- 7. Find the derivative of the following polynomial: $e^5 + 7$.
- 8. Find the limit:

$$\lim_{x \to 1} \frac{x}{\ln(x)}$$

- 9. Find the equation of the line tangent to $y = -3x^2 + 2$ at (2, -10)
- 10. Find the equation of the line tangent to y = -6x10. Find $\sin y = 3 \times \frac{d}{dx} \sin^{-1}(3x)$

$$\frac{d}{dx}\sin^{-1}(3x)$$

11. Find $\lim_{h\to 0} \frac{f(x+h)-f(x)}{h}$ for $f(x) = \pi^x, x > 0$



13. Find the second derivative of $f(x) = 2e^{-6x}$

1 (5x2+1) 5(10x)

14. Calculate $\frac{d}{dx}\sqrt{5x^2+1}$ when x=1

Mu A Individual

15. Find the tangent line at (1,1) of $x^2 + xy + y^2 = 3$.

16. Find
$$\lim_{x \to \pi} \frac{\cos(x) + \sin(x)}{\cos(-x)}$$
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17. Find
$$\frac{d^2y}{dx^2}$$
 of $y = 4\sin(3x)$

$$18. \lim_{x \to \infty} \frac{1-x}{\cos(x)}$$

 $y' = 4 \cos(3x) \cdot 3$ $\frac{dy}{dx} (x+2y) = -2x-y$

V"= - 365in(3X)

Y= - X+7