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Answer:


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Answer:


What is the slope of the line with equation $3x + 4y = 5$? Express your answer as a common fraction.
Mu Ciphering
Question #1

Name:_______________________________
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Answer:

Mu Ciphering
Question #1

Name:_______________________________
ID#:___________________
School:______________________________
Answer:
For what value of $x \in [-1, 3]$ does $f'(x)$ equal the slope of the secant line connecting the points $(-1, f(-1))$ and $(3, f(3))$ for the graph of $y = f(x) = x^2 - 5x + 7$?
Mu Ciphering Question #2

Name:_______________________________
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Answer:

 Mu Ciphering Question #2

Name:_______________________________
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Answer:

 Mu Ciphering Question #2

Name:_______________________________
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School:______________________________
Answer:

 Mu Ciphering Question #2

Name:_______________________________
ID#:___________________
School:______________________________
Answer:
What is the product of the positive integral factors of 16?
Mu Ciphering
Question #3

Name: ____________________________
ID#: ____________________________
School: __________________________
Answer: _________________________

Mu Ciphering
Question #3

Name: ____________________________
ID#: ____________________________
School: __________________________
Answer: _________________________
Evaluate the following limit:

\[
\lim_{{x \to 0}} \frac{1 - \sec^2 x}{x^2}
\]
Evaluate:
\[ \sqrt{10 + 3 \sqrt{10 + 3\sqrt{10 + \cdots}}} \]
Find the period of the graph of

\[ y = 5 \sin \left( \frac{x}{4} \right) \cos \left( \frac{x}{5} \right) + 12 \cos(4x) \sin(5x). \]
Given a circle, what is the ratio of the area of the inscribed hexagon of the circle to the area of the circumscribed hexagon of the circle? Express your answer as a common fraction.
Out of the Top Ten contestants in Mu Ciphering last year, four were female. What is the probability that three of them were in the Top Five? Express your answer as a common fraction.
The edges of a cube are growing such that the shape remains a cube. If the rate at which the edges are growing is 3 centimeters per second, how fast is the volume of the cube changing the instant the surface area of the cube is equal to 54 square centimeters? Express your answer in cubic centimeters per second.
What is the surface area of the paraboloid created by rotating the graph of \( y = \frac{1}{2}x^2 \) on the interval \( 0 \leq x \leq \sqrt{3} \) about the \( y \)-axis?
Calculate $\frac{d}{dx}f(f(x))$ evaluated at $x = 1$ if $f(x) = x^2 + 5$. 

Calculate $\frac{d}{dx}f(f(x))$ evaluated at $x = 1$ if $f(x) = x^2 + 5$. 

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Calculate $\frac{d}{dx}f(f(x))$ evaluated at $x = 1$ if $f(x) = x^2 + 5$. 