

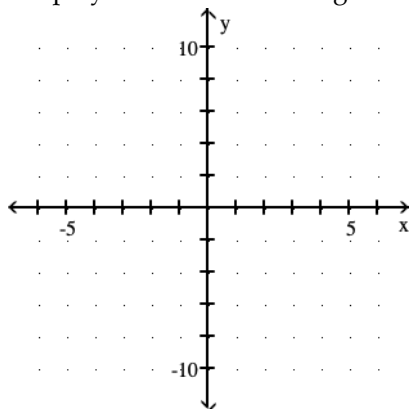
Tangent Line and the Derivative at a Point

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

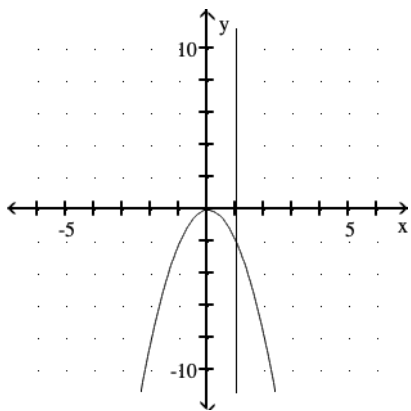
Graph the equation and its tangent.

1) Graph $y = -2x^2$ and the tangent to the curve at the point whose x-coordinate is 1.

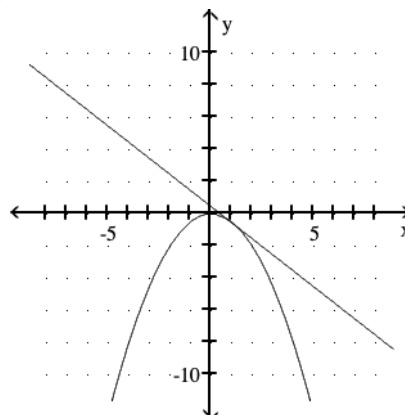
1) _____



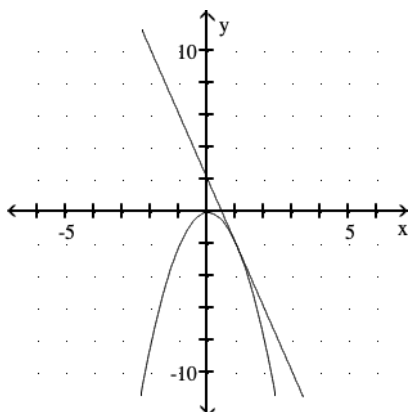
A)



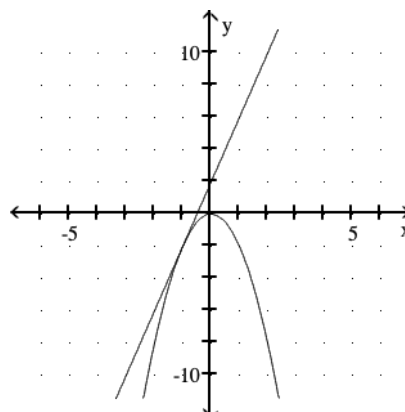
B)



C)



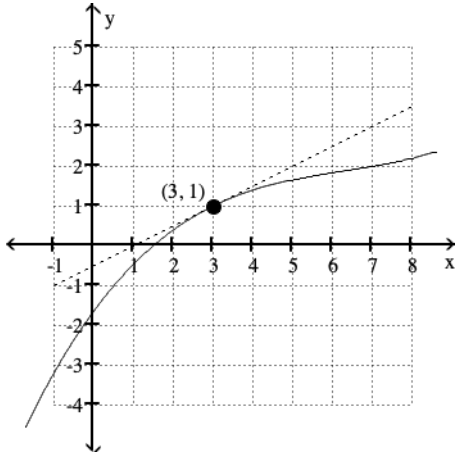
D)



Estimate the slope of the tangent line to the curve at the given point.

2)

2) _____



A) -1

B) 1

C) 2

D) 1/2

Find the slope of the line tangent to the graph at the given point.

3) $y = -5x - 7, x = 2$

3) _____

A) $m = -10$

B) $m = -5$

C) $m = 5$

D) $m = 10$

4) $y = x^2 + 5x, x = -4$

4) _____

A) $m = -8$

B) $m = 1$

C) $m = -4$

D) $m = -3$

Find an equation for the tangent to the curve at the given point.

5) $y = x^2 + 3$, $(-4, 19)$

A) $y = -8x - 13$

B) $y = -8x - 29$

C) $y = -4x - 13$

D) $y = -8x - 26$

5) _____

Use the definition $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ to find the derivative at x .

6) $f(x) = 21x - 3$

A) 21

B) -21

C) $21x$

D) 18

6) _____

7) $f(x) = x^2 + 5$

A) $x + 5$

B) $2x + 5$

C) $2x^2$

D) $2x$

7) _____

Calculate the derivative of the function. Then find the value of the derivative as specified.

8) $g(x) = 3x^2 - 4x; g'(3)$

A) $g'(x) = 2x - 4; g'(3) = 2$

C) $g'(x) = 6x; g'(3) = 18$

B) $g'(x) = 3x - 4; g'(3) = 5$

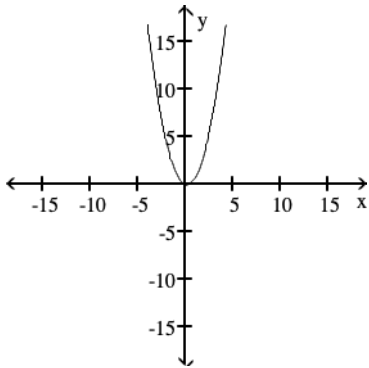
D) $g'(x) = 6x - 4; g'(3) = 14$

8) _____

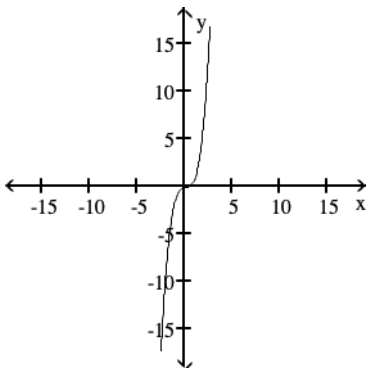
The graph of a function is given. Choose the answer that represents the graph of its derivative.

9)

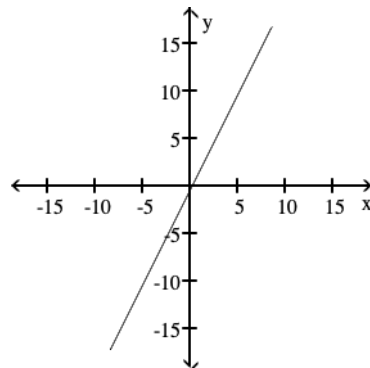
9) _____



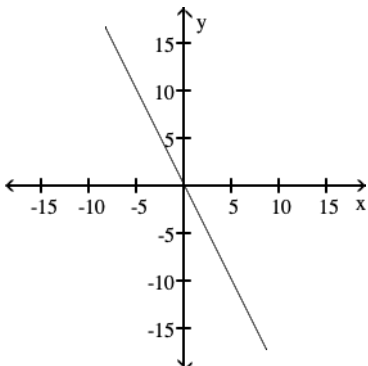
A)



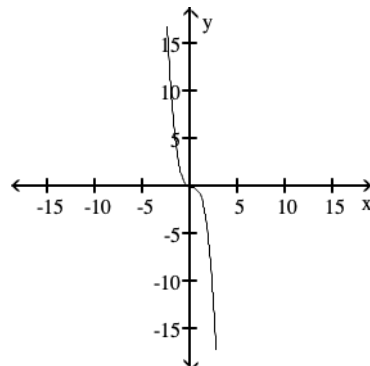
B)



C)



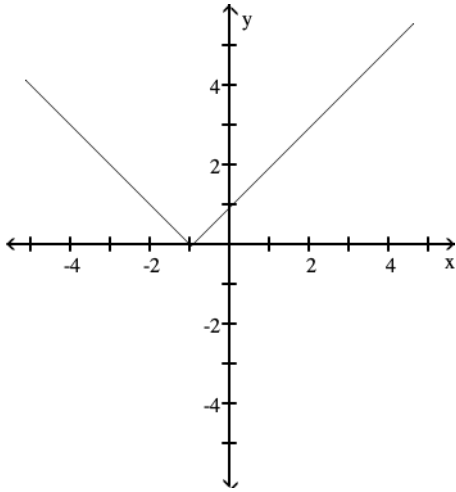
D)



The figure shows the graph of a function. At the given value of x , does the function appear to be differentiable, continuous but not differentiable, or neither continuous nor differentiable?

10) $x = -1$

10) _____



- A) Differentiable
- B) Continuous but not differentiable
- C) Neither continuous nor differentiable

Answer Key

Testname: TANGENT LINE AND THE DERIVATIVE AT A POINT

- 1) C
- 2) D
- 3) B
- 4) D
- 5) A
- 6) A
- 7) D
- 8) D
- 9) B
- 10) B