

UB 2.1 (4300704)

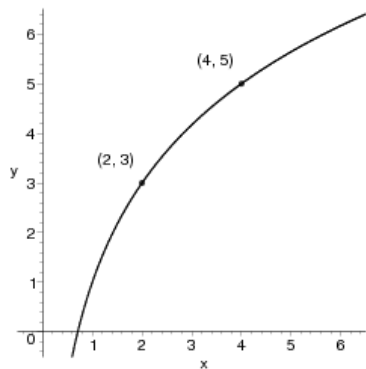
Question

1 2 3 4 5 6 7 8

1. Question Details

LarCalc9 2.1.004. [1047684]

Use the graph shown in the figure. Insert the proper inequality symbol (< or >) between the given quantities.



(a) $\frac{f(4) - f(2)}{4 - 2}$? $\frac{f(4) - f(3)}{4 - 3}$

(b) $\frac{f(4) - f(2)}{4 - 2}$? $f'(2)$

2. Question Details

LarCalc9 2.1.008.MI. [1341662]

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

$$g(x) = 5 - x^2; \quad (1, 4)$$

3. Question Details

LarCalc9 2.1.017. [1047688]

Find the derivative by the limit process.

$$f(x) = x^2 + x - 1$$

 $f'(x) =$

4. Question Details

LarCalc9 2.1.025. [1196844]

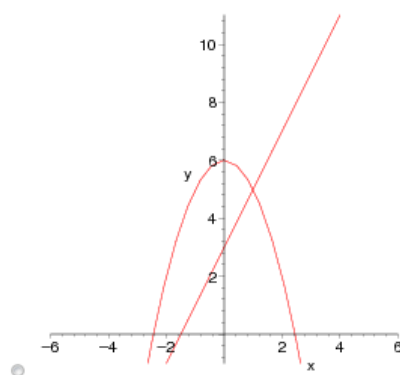
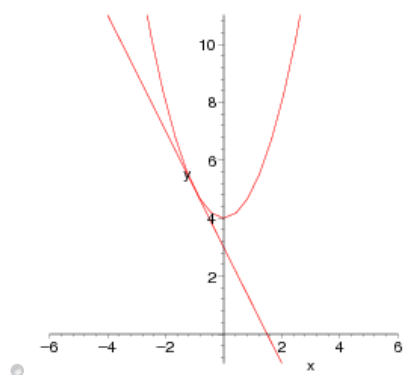
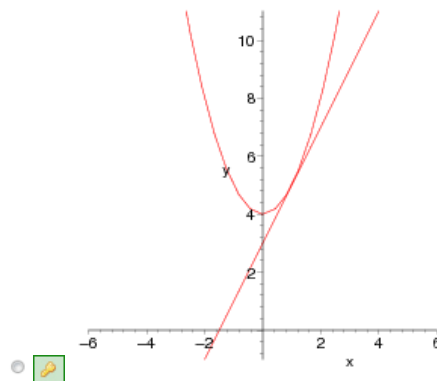
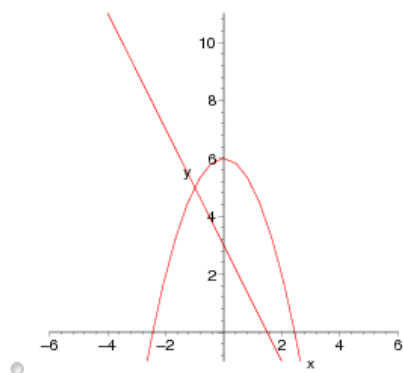
Consider the following function.

$$f(x) = x^2 + 4, \quad (1, 5)$$

(a) Find an equation of the tangent line to the graph of f at the given point.

$y =$

(b) Use a graphing utility to graph the function and its tangent line at the point.



5. Question Details

LarCalc9 2.1.029. [1197018]

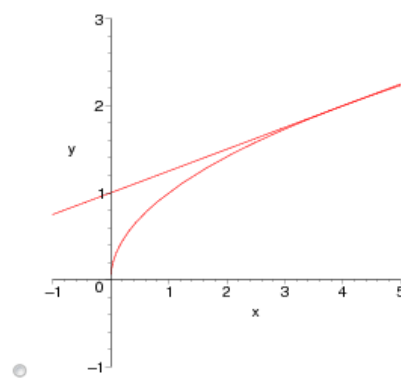
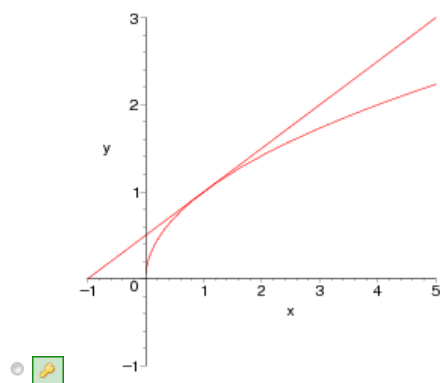
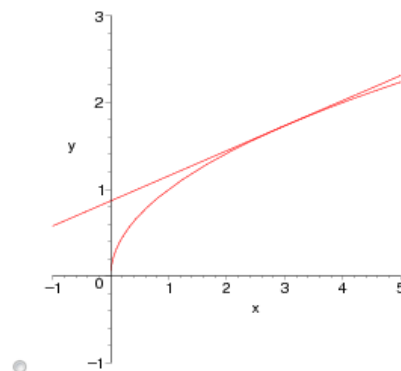
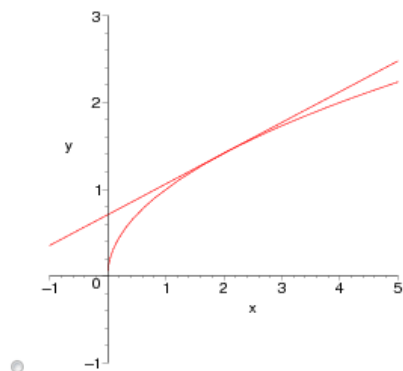
Consider the following function.

$$\sqrt{x}, (1, 1)$$

(a) Find an equation of the tangent line to the graph of f at the given point.

$y =$

(b) Use a graphing utility to graph the function and its tangent line at the point.



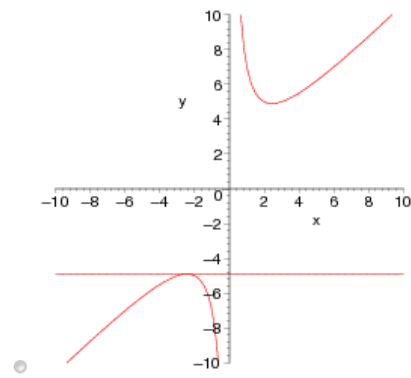
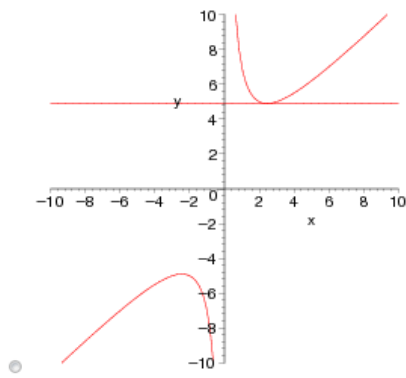
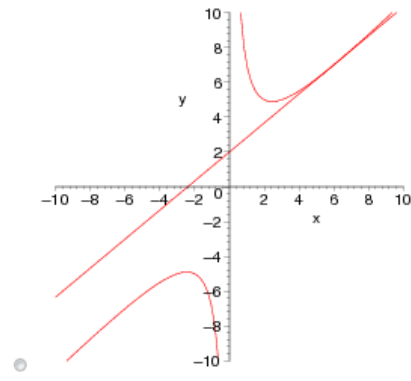
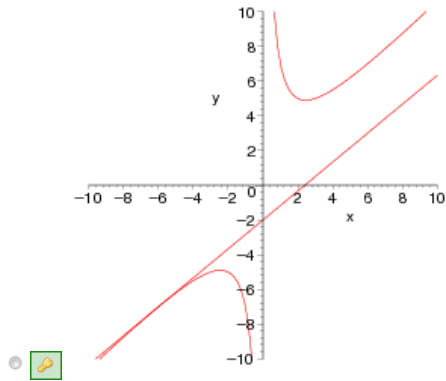
Consider the following function.

$$f(x) = x + \frac{6}{x}, \quad (-6, -7)$$

(a) Find an equation of the tangent line to the graph of f at the given point.

$y =$

(b) Use a graphing utility to graph the function and its tangent line at the point.



7. Question Details

LarCalc9 2.1.033. [1197073]

Find an equation of the line that is tangent to the graph of f and parallel to the given line.

Function	Line
$f(x) = x^2$	$10x - y + 25 = 0$

STEP 1: Find $f'(x)$ using the limit definition of the derivative.

$$f'(x) = \boxed{2x}$$

STEP 2: Find the slope m of the given line.

$$m = \boxed{10}$$

STEP 3: Equate $f'(x)$ with the slope and solve for x .

$$x = \boxed{5}$$

STEP 4: Find the corresponding y value by substituting x into $f(x)$.

At the point $(x, y) = (\boxed{5}, \boxed{25})$ the tangent line of $f(x)$ is parallel to $10x - y + 25 = 0$.

STEP 5: Use the results of Step 2 and Step 4 with the point-slope formula to find the equation of the line.

$$y = \boxed{10x - 25}$$

8. Question Details

LarCalc9 2.1.034. [1197730]

Find an equation of the line that is tangent to the graph of f and parallel to the given line.

Function	Line
$f(x) = 2x^2$	$2x - y + 5 = 0$

$$y = \boxed{2x - 0.5}$$

Assignment Details

Name (AID): **UB 2.1 (4300704)**Submissions Allowed: **5**Category: **Homework**

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