

[07-12-06-T12]
Assignment

■ Please find the slope of the line tangent to the function's graph at the indicated point.

[1] $f(x) = \frac{3}{x}$, $P(15, \frac{1}{5})$

[2] $f(x) = x^2 + 5x - 6$, $P(2, 8)$

[3] $f(x) = \sqrt{5x}$, $P(5, 5)$

[4] $f(x) = \frac{1}{\sqrt{c}}$, $P(c, \frac{1}{\sqrt{c}})$

■ Answer the following.

[1] Suppose the position of a particle as a function of time is given by $x(t) = 10 + 2t - 3t^2$, (a) find the velocity (the instantaneous rate of change in particle's position as a function of time). (b) What is the maximum distance in the positive direction that the particle reaches?

Answers

■ Please find the slope of the line tangent to the function's graph at the indicated point.

[1] $-\frac{1}{75}$

[2] 9

[3] $\frac{1}{2}$

[4] With typo as written, the answer is zero; if you fix question as follows $f(x) = \frac{1}{\sqrt{x}}$, $P(c, \frac{1}{\sqrt{c}})$, then the answer is $-\frac{1}{2c^{3/2}}$

■ Answer the following.

[1] $10\frac{1}{3}$