Quiz 1.3 – Derivatives of Linear Functions

1. **(1 point) —alfredLibrary/AUCI/chapter1/lesson3/quiz/question1p.pg**
Suppose the slope of the graph of a function f at $x = 6.3$ is -8.

(a) The rate of change of f at $x = 6.3$ is _____.

(b) The slope of the line tangent to the graph of f at $x = 6.3$ is _____.

(c) The derivative of f at $x = 6.3$ is _____.

(d) $f'(6.3) =$ _____.

2. **(1 point) —alfredLibrary/AUCI/chapter1/lesson3/quiz/question2p.pg**
The first derivative of $y = 9x - 8$ is $y' =$ _____.

The second derivative of $y = 9x - 8$ is $y'' =$_____.

3. **(1 point) —alfredLibrary/AUCI/chapter1/lesson3/quiz/question2pet.pg**
If $y = -4x + 7$, then

$y' =$ _____, and

$y'' =$_____.

4. **(1 point) —alfredLibrary/AUCI/chapter1/lesson3/quiz/question3pet.p**
Suppose the temperature of a beaker of water t minutes after heat is applied is $T(t) = 6t + 40$ degrees Celsius. Include **units** with your answers and enter rate units as fractions. Type degC for degrees Celsius, min for minutes, and min^2 for square minutes.

(a) The rate at which the temperature is increasing is $T'(t) =$ _____.

(b) The rate at which the rate is increasing is $T''(t) =$ _____.