

## 2.2 webassign

### Hints

#### Question 1

What does the derivative mean? slope

What does slope mean? change in function value when input changes by 1

example slope =  $\frac{3}{2}$  means the function adds 3 when input adds 2

or the function adds 1.5 when input adds 1

My example: given  $f'(5)=1.5$  and  $f(5)=20$  estimate  $f(8)$  ?

method 1 interpret slope and estimate

at 5 the function is increasing at a rate of 1.5

must go 3 units  $(8-5)$  so the function will increase by  $3(1.5) = 4.5$

$f(5) + \text{increase} = 20 + 4.5 = 24.5$

method two: write the equation of the tangent line and then plug in 8 for x and evaluate

$y = 1.5(x-5) + 20$

$1.5(8-5) + 20 = 24.5$  estimate based on rate of change at 5. The best we can do with the information given

#### Question 7 requires work

Find the rate of change near those points

Can't do algebraically, so make a table of values of the difference quotient at each of the points in question.

You are asked to find the rate of change (ESTIMATE - table of value as  $h$  approaches 0)