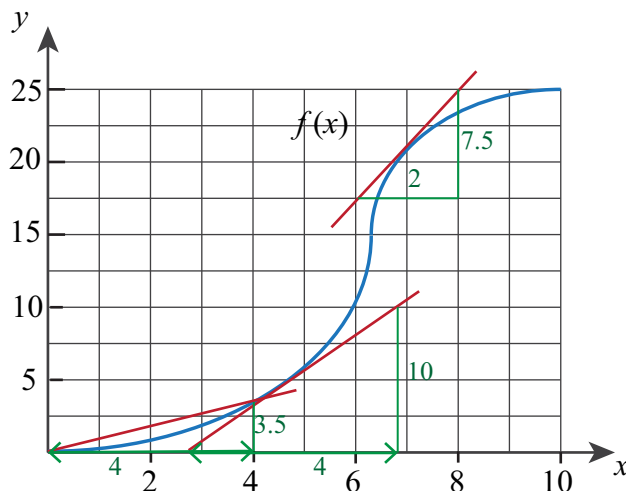
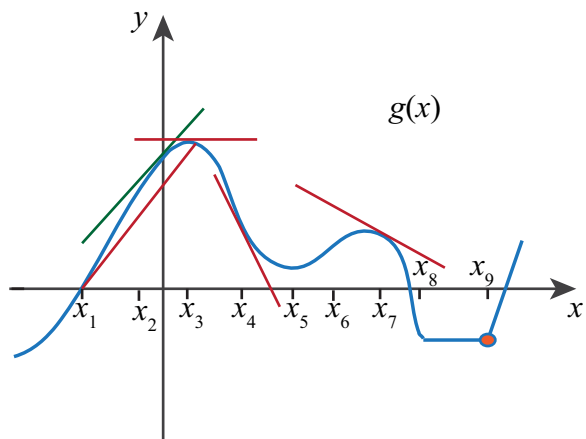


Tangent Lines and Derivatives Worksheet - Answer Key



1. Estimate $f'(5)$.
 $\frac{10}{4} = 2.5$
2. Estimate the average rate of change of f on $[0, 4]$.
 $\frac{3.5}{4} = 0.875$
3. Estimate the derivative of f at $x = 6.2$.
Infinity, since the tangent at $x = 6.2$ is vertical.
4. Draw $f'(7)$ on the above graph and estimate its value.
 $\frac{7.5}{2} = 3.75$
5. If $f(1) = a$ and $f'(1) = -1$, use local linearization to approximate $f(1 - h)$.



$a + h$

6. Find a relation between $g'(x_2)$ and $\frac{g(x_1) - g(x_3)}{x_3 - x_1}$.
 $\frac{g(x_1) - g(x_3)}{x_3 - x_1} = -g'(x_2)$
7. Compare $g'(x_4)$ and $g'(x_7)$.
 $g'(x_4)$ is smaller than $g'(x_7)$.
8. Compare $g'(x_3)$ and $g'(x_1)$.
Both equal 0.
9. Estimate $g'(x_9)$.
The derivative does not exist.
10. Which is greater: $g'(x_8)$ or x_1 ?
 $g'(x_8)$

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