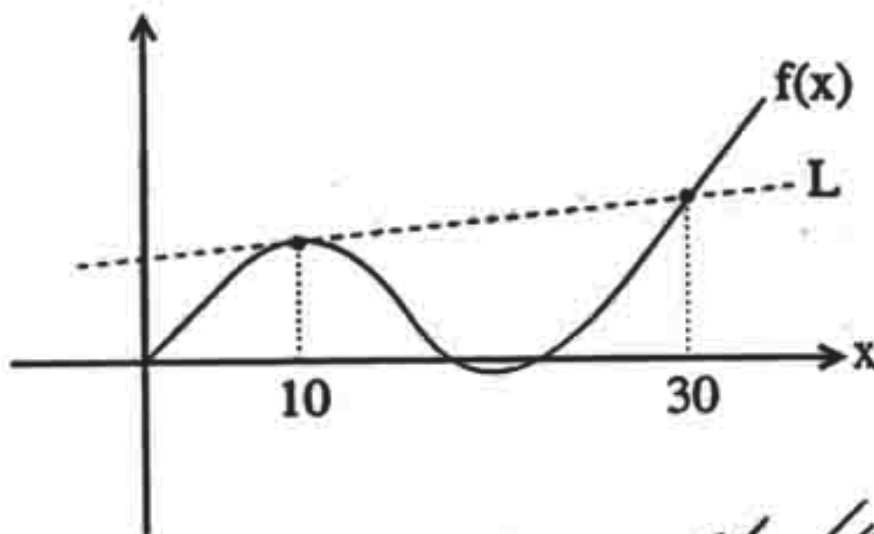


3. (3 pts.) Let $g(x) = \ln(x^2 + 3)$. What is the average rate of change in g over the interval from -1 to 3 ?

$$\begin{aligned} \text{Avg Rate of Chn betw } x=3 \text{ \& } x=-1 &= \frac{g(3) - g(-1)}{3 - (-1)} = \frac{\ln(12) - \ln(4)}{4} \\ &\approx .27465 \end{aligned}$$

4. (4 pts.) Shown below is a part of the graph of the function f together with a part of the graph of the tangent line L to f at the point $x = 10$. Suppose that $f(10) = 8$ and $f'(10) = 0.12$. Calculate $f(30)$.



$$\begin{aligned} \text{pt } (10, 8) \\ m = 0.12 \end{aligned}$$

$$\begin{aligned} 8 &= 0.12(10) + b \\ b &= 6.8 \end{aligned}$$

$$f(30) = \underline{10.4}$$

$$\begin{aligned} f(30) &= 0.12(30) + 6.8 \\ &= 10.4 \end{aligned}$$