Derivative Function Worksheet

Fig 1

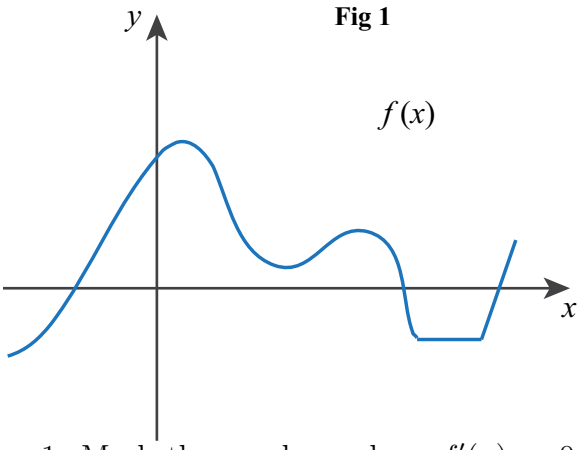
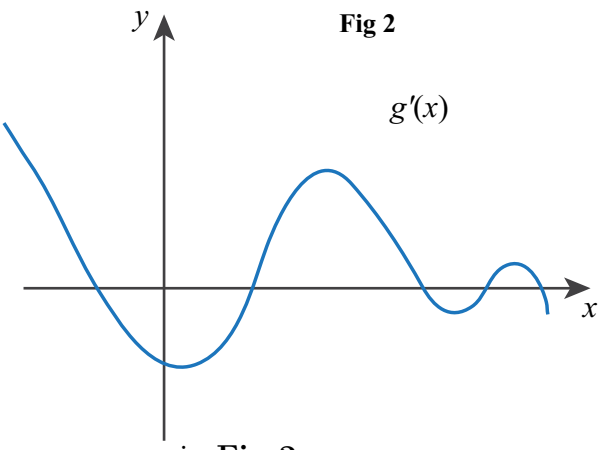


Fig 2



1. Mark the x-values where $f'(x) = 0$ in **Fig 1**.
2. Mark the x-values where $f'(x) > 0$ in **Fig 1**.
3. Mark the x-values where g is maximum in **Fig 2**.
4. Mark the intervals where g is increasing in **Fig 2**.
5. Sketch the graph of $f'(x)$ on the same axes in **Fig 1**.
6. Sketch the graph of $g(x)$ on the same axes in **Fig 2**.
7. Find the slope of the tangent to $f(x) = 3x^3 + 3$ at $x = -2$.
8. Use the answer from (7) to find the equation of the tangent line to $f(x) = 3x^3 - 3$ at $x = -2$.
9. If $g'(x) = \frac{1}{x^2-5x+6}$, find the points where $g(x)$ is not differentiable.
10. Write the necessary condition for $y = \frac{f'(a)}{a}x$ to be a tangent line to $f(x)$ at $x = a$.

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