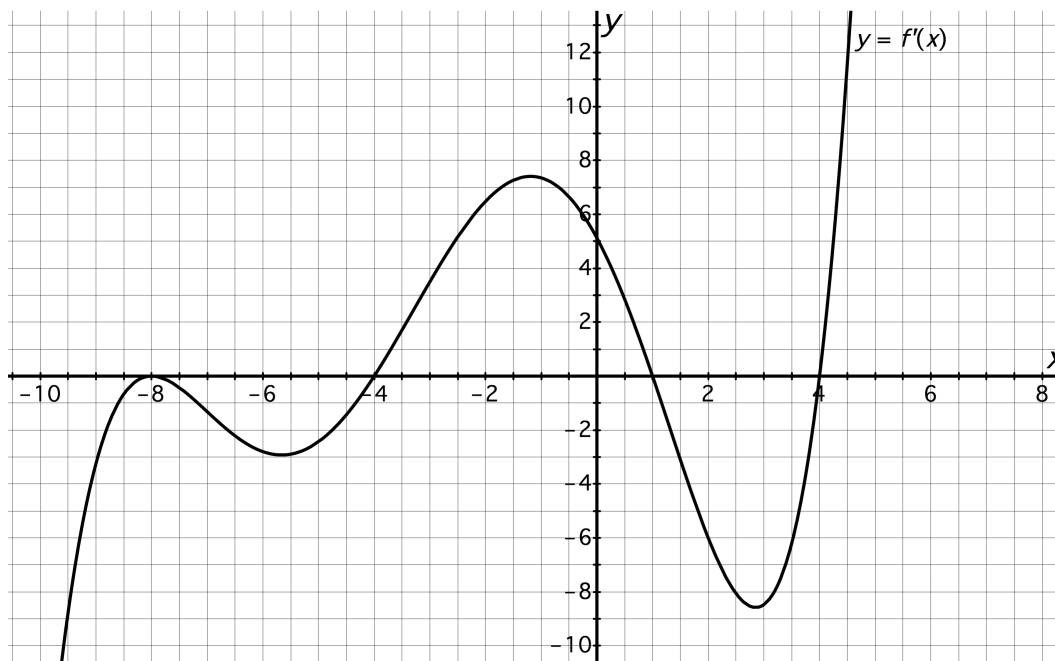
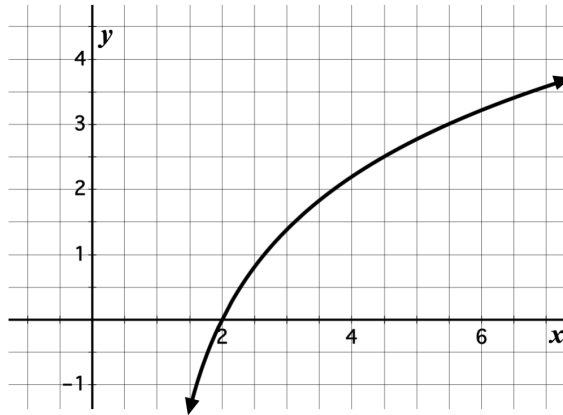


Graphing Derivatives

1. Below is a graph of a derivative function $y = f'(x)$.

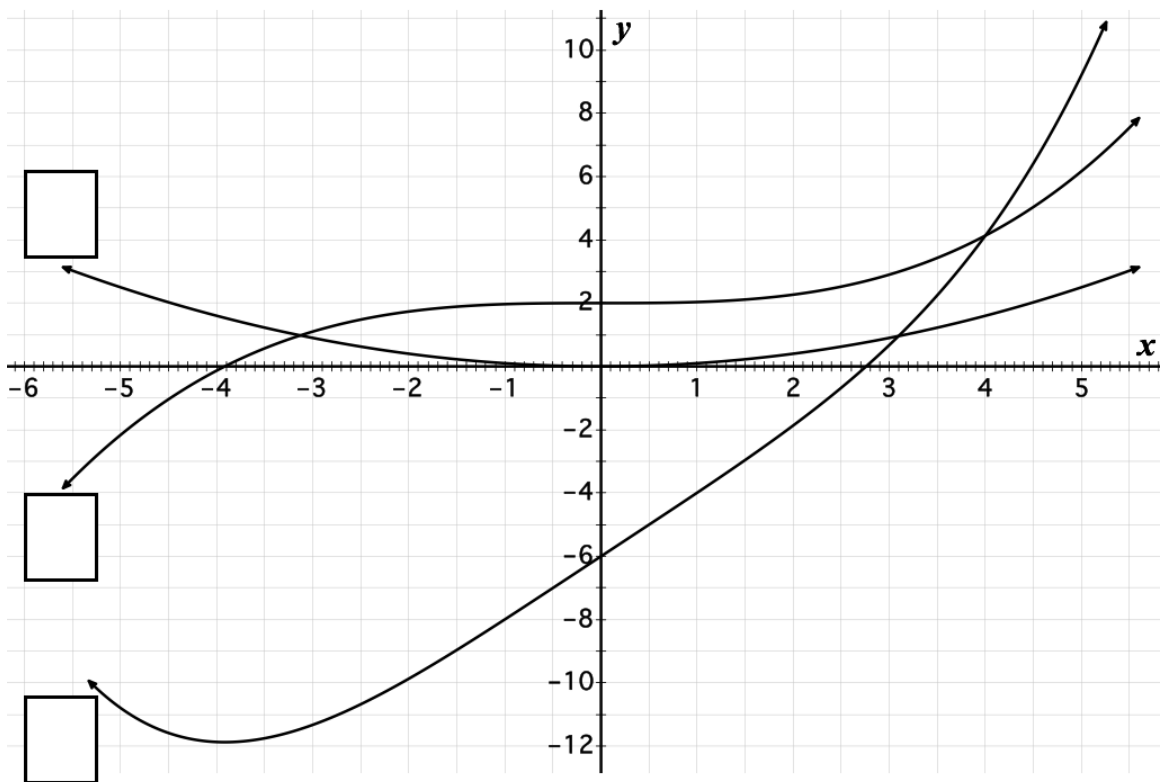


- (a) Based on this graph, for what value(s) of x does $f(x)$ have a maximum value?
- (a) $x = -1.5$
 - (b) $x = -4$ and $x = 4$
 - (c) $x = 1$
 - (d) $x = -8$, $x = -4$, $x = 1$, and $x = 4$
 - (e) $f(x)$ does not have a maximum value.
- (b) Based on this graph, for what value(s) of x is $f(x)$ increasing?
- (a) $x < -8$
 - (b) $-8 < x < -4$
 - (c) $-4 < x < 1$
 - (d) $1 < x < 4$
 - (e) $4 < x$.
2. **T F** If $g'(x) > 0$ for all x in the interval $(0, 7)$, then $g(5) > g(2)$.
3. The graph of a twice-differentiable function f is shown below. Note that $f''(x) = \frac{df'}{dx}(x)$. Which of the following is true?



- (a) $f''(2) < f(2) < f'(2)$
- (b) $f'(2) < f(2) < f''(2)$
- (c) $f''(2) < f'(2) < f(2)$
- (d) $f(2) < f''(2) < f'(2)$
- (e) $f(2) < f'(2) < f''(2)$

4. The following diagram shows the graphs of a function f , together with the graphs of its first derivative f' and second derivative f'' . Which one is which? Label the three graphs with f , f' and f'' .



5. Below is a graph of the function f . Based on this graph, draw a graph of f' .

