The Graphs of Derivatives

1. Match each graph in the top row with the graph of its derivative function in the bottom row.

(a)

(b)

(c)

(d)

i.

ii.

iii.

iv.
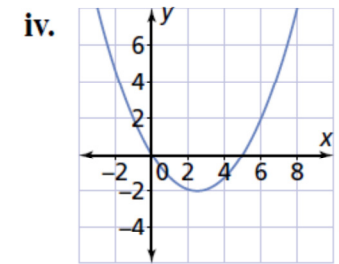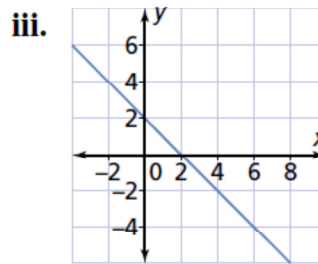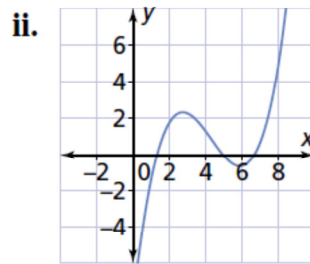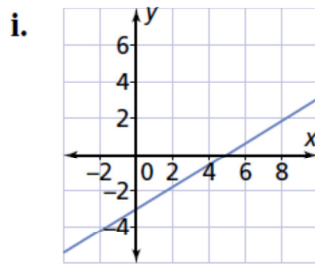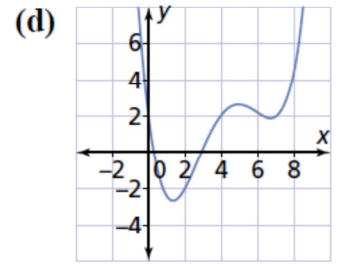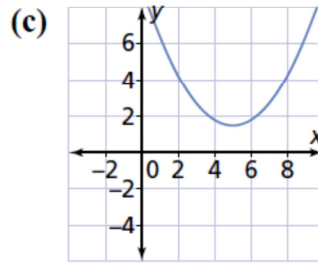
2. For the graph of each function, estimate and graph the derivative function.

(a)
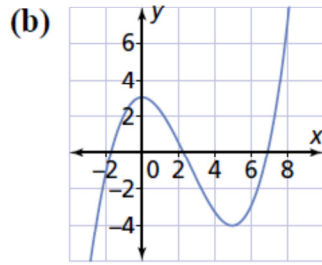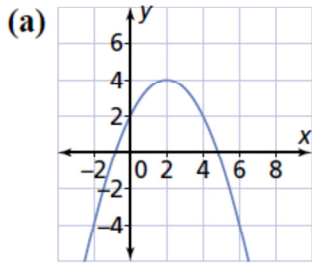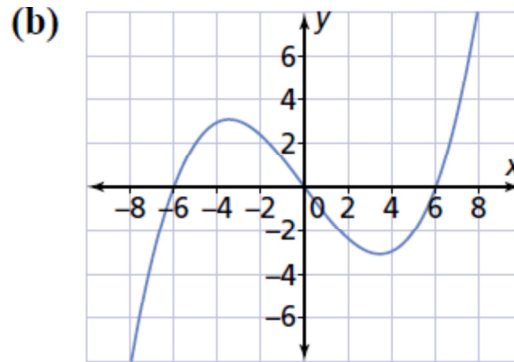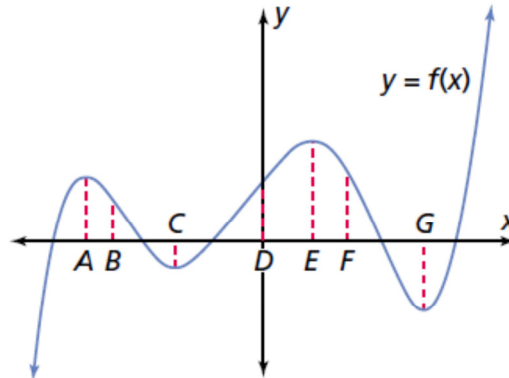
(b)
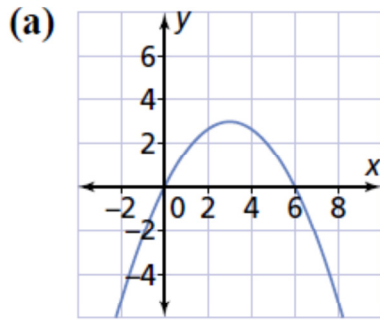
3.

For the graph shown, identify the points or intervals where each derivative is positive, negative, and 0.
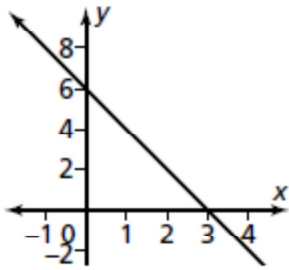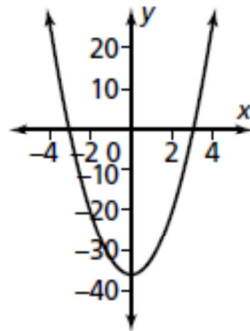
(a) $\dfrac{dy}{dx}$

(b) $\dfrac{d^2y}{dx^2}$

$y = f(x)$

Answers

1. (a) iii. (b) iv. (c) i. (d) ii.

2. (a)

(b)

3. (a) pos.: $x < A$, $C < x < D$, $x = D$, $D < x < E$, $x > G$;

neg.: $A < x < B$, $x = B$, $B < x < C$, $E < x < F$, $x = F$, $F < x < G$;

zero: $x = A$, $x = C$, $x = E$, $x = G$

(b) pos.: $B < x < C$, $x = C$, $C < x < D$, $F < x < G$, $x = G$, $x > G$;

neg.: $x < A$, $x = A$, $A < x < B$, $D < x < E$, $x = E$,

$E < x < F$; zero: $x = B$, $x = D$, $x = F$