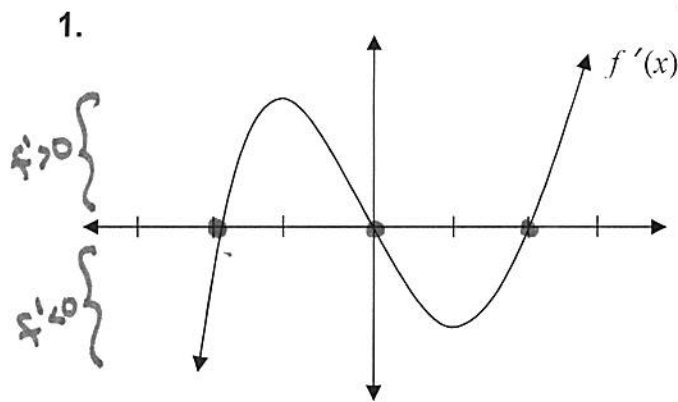


Given the graph of  $f'(x)$ , describe find where  $f(x)$  is increasing and decreasing.

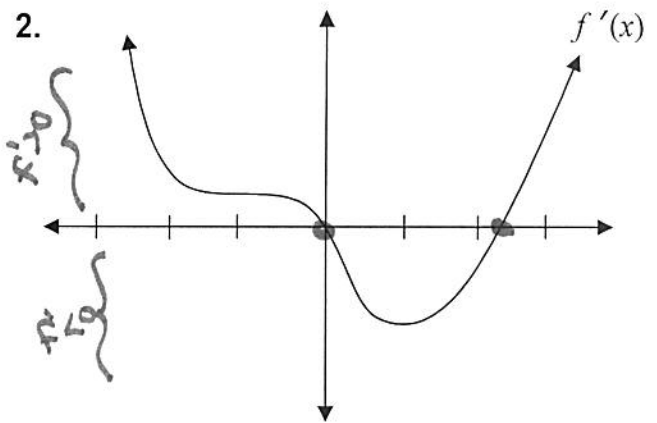


$$f'(x) = 0 \text{ @ } x = -2, x = 0, x = 2$$

$$f' \begin{array}{c} - \quad + \quad - \quad + \\ -2 \quad 0 \quad 2 \end{array}$$

$f$  inc on  $(-2, 0) \cup (2, \infty)$  b/c  $f' > 0$   
on those intervals

$f$  dec on  $(-\infty, -2) \cup (0, 2)$  b/c  $f' < 0$   
on those intervals.

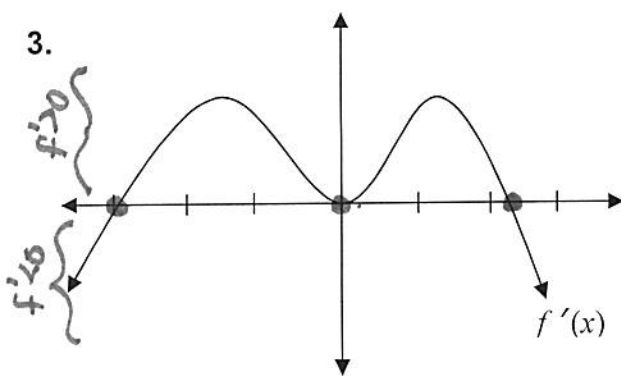


$$f'(x) = 0 \text{ @ } x = 0, x = 2.5$$

$$f' \begin{array}{c} + \quad - \quad + \\ 0 \quad 2.5 \end{array}$$

$f$  inc on  $(-\infty, 0) \cup (2.5, \infty)$  b/c  
 $f' > 0$  on those intervals

$f$  dec on  $(0, 2.5)$  b/c  $f' < 0$   
on  $(0, 2.5)$

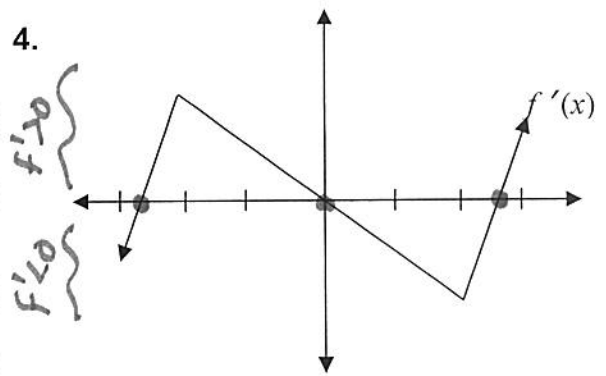


$$f'(x) = 0 \text{ @ } x = -3, x = 0, x = 2.5$$

$$f' \begin{array}{c} - \quad + \quad + \quad - \\ -3 \quad 0 \quad 2.5 \end{array}$$

$f$  inc on  $(-3, 0) \cup (0, 2.5)$  b/c  $f' > 0$   
on those intervals

$f$  dec on  $(-\infty, -3) \cup (2.5, \infty)$  b/c  
 $f' < 0$  on those intervals



$$f'(x) = 0 \text{ @ } x = -2.5, x = 0, x = 2.5$$

$$f' \begin{array}{c} - \quad + \quad - \quad + \\ -2.5 \quad 0 \quad 2.5 \end{array}$$

$f$  inc on  $(-2.5, 0) \cup (2.5, \infty)$  b/c  
 $f' > 0$  on those intervals

$f$  dec on  $(-\infty, -2.5) \cup (0, 2.5)$  b/c  
 $f' < 0$  on those intervals.