Math 100

Section 4.4

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Administer the test if you dare!

§4.3 Increasing and Decreasing

f is decreasing on the interval $(0, 2)$ and $f(0) = 2$, $f(2) = 0$. Which of the following could be the equation of the tangent line at $x = 1$?

(A) $y = -2x + 5$

(B) $y = 2x - 5$

(C) $y = -3x$

(D) $y = -2x + 3$

(E) None of the above

§3.5 Extrema

We know $f'(2) = 0$. We may conclude

(A) f has a local min at 2.

(B) f has a local max at 2.

(C) f has a local min or local max at 2, but we don't know which one.

(D) f has a global max or global min at 2, but we don't know which one.

(E) None of the above.

§4.4 First Derivative Test

$f'(3) = 0$ and for $a < 3$, $f'(a) < 0$ and for $b > 3$, $f'(b) > 0$.
Then at $x = 3$ f has

(A) a local maximum

(B) a local minimum

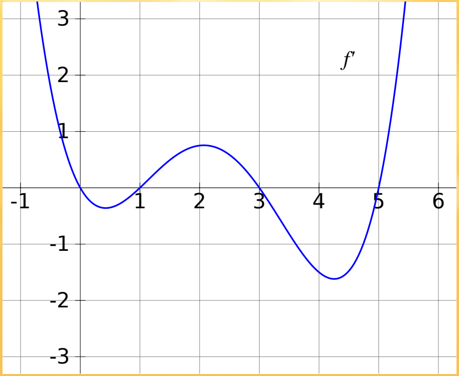
(C) a stationary point

(D) either a local min or a local max

(E) None of the above

§4.4 First Derivative Test

From the graph of f' we can deduce that at $x = 3$ an f has



(A) a local maximum

(B) a local minimum

(C) a stationary point

(D) either a local min or a local max

(E) None of the above

§4.4 First Derivative Test

$f'(x) = -2x + 6$. We conduce that at 3, f has

(A) a local maximum

(B) a local minimum

(C) a stationary point

(D) either a local min or a local max

(E) None of the above

§4.4 First Derivative Test

$f'(x) = -2x + 6$. We conduce that at 2, f has

(A) a local maximum

(B) a local minimum

(C) a stationary point

(D) either a local min or a local max

(E) None of the above

§4.4 First Derivative Test

$f'(x) = (x - 3)^2$. We conduce that at 3, f has

(A) a local maximum

(B) a local minimum

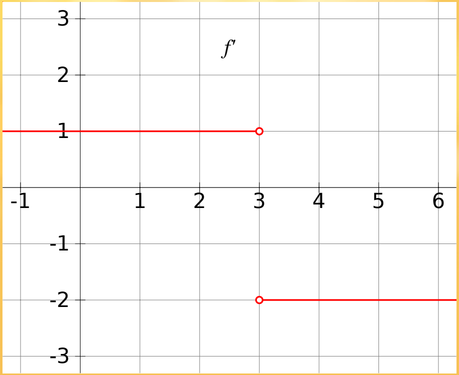
(C) a stationary point

(D) either a local min or a local max

(E) None of the above

§4.4 First Derivative Test

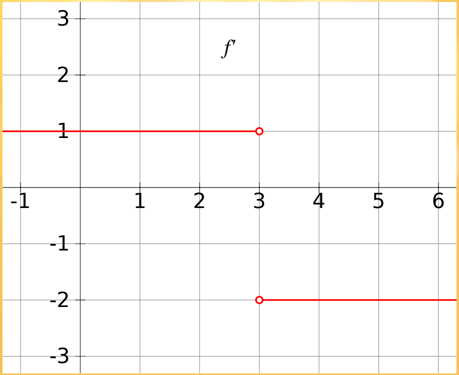
f is continuous. From the graph of f' we can deduce at $x = 3$, f has



(A) a local maximum
(B) a local minimum
(C) a stationary point
(D) either a local min or a local max
(E) None of the above

§4.4 First Derivative Test

f is not continuous. From the graph of f' we can deduce at $x = 3$, f has



(A) a local maximum
(B) a local minimum
(C) a stationary point
(D) either a local min or a local max
(E) None of the above

§4.4 First Derivative Test

$f'(x) = xe^x$ and f has domain $[3, 8]$. At $x = 3$ f has

(A) a local maximum

(B) a local minimum

(C) a stationary point

(D) either a local min or a local max

(E) None of the above

§4.4 First Derivative Test

$f'(x) = xe^x$ and f has domain $[3, 8]$. At $x = 8$ f has

(A) a local maximum

(B) a local minimum

(C) a stationary point

(D) either a local min or a local max

(E) None of the above

§4.4 First Derivative Test

$f'(x) = \dfrac{x}{x^2+1}$. f has critical point at

(A) 0

(B) $\dfrac{-1 \pm \sqrt{5}}{2}$

(C) -1

(D) ± 1

(E) None of the above

§4.4 First Derivative Test

$f'(x) = \dfrac{x}{x^2+1}$. At $x = 0$ f has

(A) a local maximum

(B) a local minimum

(C) a stationary point

(D) either a local min or a local max

(E) None of the above