

## PROBLEM

If  $f(x) = x^3 + 7x - 1$ , then  $f(x)$  has a zero between  $x = 0$  and  $x = 1$ . The theorem that best describes this is

- a. mean value theorem
- b. maximum-minimum value theorem
- c. intermediate value theorem
- d. none of these

## SOLUTION

c.  $f(0) = -1; f(1) = 7$ . So,  $f(0)$  and  $f(1)$  have opposite signs.