

PROBLEM 1: Let $f(x) = 3x^5 - 4x^2 - 3$

f is continuous on $[0, 2]$

$$f(0) = -3 \quad \text{and} \quad f(2) = 77$$

$$0 \in (-3, 77) \quad \text{IVT applies}$$

Therefore, $3x^5 - 4x^2 - 3 = 0$ has at least a solution on $[0, 2]$.

PROBLEM 2: Let $g(x) = e^x + x^3 - 4$

g is continuous on $[0, 2]$

$$g(0) = 1 + 0 - 4 = -3$$

$$g(2) = e^2 + 8 - 4 = e^2 + 4$$

$$0 \in (-3, e^2 + 4) \quad \text{IVT applies.}$$

Therefore $e^x + x^3 - 4 = 0$ has at least a solution on $[0, 2]$

PROBLEM 3: Let $f(x) = x^3 + 2x - 5$... $f(0) < 0$ $f(2) > 0$

PROBLEM 4: Let $f(x) = e^x + x + 2$... $f(-3) < 0$ $f(0) > 0$

PROBLEM 5: Let $f(x) = x^5 + x^2 - 3x - 4$... $f(0) < 0$ $f(2) > 0$

PROBLEM 6: Let $f(x) = x^3 - \sqrt{x} - 20$... $f(0) < 0$ $f(3) > 0$

PROBLEM 7: Let $f(x) = x^3 - \sin x + 2$... $f(-2) < 0$ $f(0) > 0$

PROBLEM 4:

PROBLEM 9:

PROBLEM 2:

PROBLEM 4:

PROBLEM 3:

PROBLEM 5:

PROBLEM 1:

RETRY BRIDGE 17.1

VF Corp