

EJERCICIO M18E-2219:

Halla las derivadas:

$$a.- f(x) = \sqrt[5]{x^2 - 3x}$$

$$b.- g(x) = (6x^3 + 4x)^4$$

$$a) f(x) = \sqrt[5]{x^2 - 3x} = (x^2 - 3x)^{1/5}$$

$$f'(x) = \frac{1}{5} (x^2 - 3x)^{\frac{1}{5} - 1} \cdot (x^2 - 3x)'$$

$$= \frac{1}{5} (x^2 - 3x)^{-\frac{4}{5}} \cdot (2x - 3) =$$

$$= \frac{1}{5} \frac{1}{(x^2 - 3x)^{4/5}} \cdot (2x - 3) =$$

$$= \frac{2x - 3}{5 \cdot \sqrt[5]{(x^2 - 3x)^4}} \cdot \frac{\sqrt[5]{x^2 - 3x}}{\sqrt[5]{x^2 - 3x}} =$$

$$= \frac{(2x - 3) \sqrt[5]{x^2 - 3x}}{5 \cdot \sqrt[5]{(x^2 - 3x)^5}}$$

$$f'(x) = \frac{(2x - 3) \sqrt[5]{x^2 - 3x}}{5(x^2 - 3x)}$$

$$b) g(x) = (6x^3 + 4x)^4$$

$$g'(x) = 4(6x^3 + 4x)^3 \cdot (18x^2 + 4) = (72x^2 + 16) \cdot (6x^3 + 4x)^3$$