

Answer on Question #82441 – Math – Calculus

Question

Form a polynomial whose zeros and degree are given.

Zeros: -4,4,2; degree: 3

Solution

In order to make a polynomial $F(x)$ with zeros a, b, c , it is necessary to multiply the expressions $(x-a)$, $(x-b)$ and $(x-c)$.

Thus,

$$\begin{aligned} F(x) &= (x - (-4))(x - 4)(x - 2) = (x + 4)(x - 4)(x - 2) = (x^2 - 16)(x - 2) = \\ &= x^3 - 16x - 2x^2 + 32 = x^3 - 2x^2 - 16x + 32 \end{aligned}$$

Answer:

$$F(x) = x^3 - 2x^2 - 16x + 32$$