

Answer on Question #45802 – Math - Calculus

Find the inverse of the function: $f(x) = x^3 + 8$.

Solution:

We can work out the inverse using next steps:

- 1) The function: $f(x) = x^3 + 8$.
- 2) Put y for $f(x)$: $y = x^3 + 8$.
- 3) Switch the x and the y , because every (x, y) has a (y, x) partner:
$$x = y^3 + 8$$
- 4) Solve for y :

$$\begin{aligned}y^3 &= x - 8 \\y &= \sqrt[3]{x - 8}\end{aligned}$$

- 5) Stick in the inverse notation, $f^{-1}(x)$.

$$f^{-1}(x) = \sqrt[3]{x - 8}$$

Answer:

$$f^{-1}(x) = \sqrt[3]{x - 8}$$