Answer on Question #44014 – Math – Algebra

Solve for x over the real numbers:

$x^3 - 2x^2 - x + 2 = 0$

Factor the left hand side.

The left hand side factors into a product with three terms:

$(x-2)(x-1)(x+1) = 0$

Solve each term in the product separately.

Split into three equations:

$x - 2 = 0$ or $x - 1 = 0$ or $x + 1 = 0$

Look at the first equation: Solve for x.

Add 2 to both sides:

$\boxed{x = 2}$ or $x - 1 = 0$ or $x + 1 = 0$

Look at the second equation: Solve for x.

Add 1 to both sides:

$x = 2$ or $\boxed{x = 1}$ or $x + 1 = 0$

Look at the third equation: Solve for x.

Subtract 1 from both sides:

Answer:

$x = 2$ or $x = 1$ or $\boxed{x = -1}$