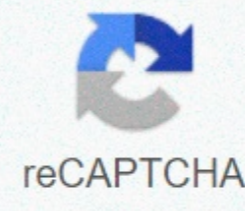




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## Solving simple cubic equations worksheet pdf

5.6 ورزش  $(x^3 + x^2 - 16x = 16) \begin{aligned} x^3 + x^2 - 16x &= 16 \\ x^3 + x^2 - 16x - 16 &= 0 \end{aligned} \begin{aligned} \text{Let } a(x) &= x^3 + x^2 - 16x - 16 \\ a(-1) &= (-1)^3 + (-1)^2 - 16(-1) - 16 = -1 + 1 + 16 - 16 = 0 \end{aligned}$

$\begin{aligned} \text{So } x &= -1 \text{ is a root.} \\ \text{Divide } x^3 + x^2 - 16x - 16 &\text{ by } x + 1. \end{aligned}$

$\begin{aligned} x^3 &+ x^2 - 16x - 16 \\ \underline{-(x^3 + x^2)} &+ 0x - 16 \\ \hline &-16x - 16 \\ &\underline{-( -16x - 16)} \\ &0 \end{aligned}$

$\therefore x^3 + x^2 - 16x - 16 = (x + 1)(x^2 - 16)$

$\therefore (x + 1)(x + 4)(x - 4) = 0$

$\therefore x = -1, -4, 4$

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