April 13, 2015

10.7 #19) $i^{-37} = \frac{1}{i^{37}} = \frac{1}{(i^4)^9 \cdot i} = \frac{1}{i}$

$\frac{37}{4} = 9 \text{ r } 1$

$\frac{1}{i} \cdot \frac{-i}{-i} = \frac{-i}{-i^2}$

$= \frac{-i}{(-1)\cdot(-1)} = \frac{-i}{1}$

$= \boxed{-i}$

Apr 13-11:02 AM

$(2i)^6 = (2i)(2i)(2i)(2i)(2i)(2i)$

$= 2^6 \cdot i^6$

$= 64 \cdot (i^4)^1 \cdot i^2$

$= 64 \cdot 1 \cdot (-1)$

$= -64$

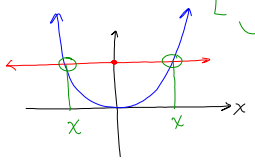
Apr 13-11:07 AM

Quadratic Functions

Standard Form

$ax^2 + bx + c = 0$ ② Degree 2 Polynomial

Two Solutions !!



Apr 13-11:09 AM

$x^2 - 4 = 0$

methods to solve quadratics

① Factoring

② Square Root Property

③ Completing the Square

④ Quadratic Formula

Apr 13-11:13 AM

$x^2 - 4 = 0$

* use Square Root Property

a.) Get the squared term isolated

$x^2 = 4$

b.) Take the Square Root of both sides

$\sqrt{x^2} = \pm\sqrt{4}$

$\boxed{x = \pm 2}$

① $x = 2$

② $x = -2$

Ck

$x = -2$

$(-2)^2 - 4 = 0$

$4 - 4 = 0$

$0 = 0$ ✓

Apr 13-11:16 AM

$x^2 - 7 = 0$

$\sqrt{x^2} = \pm\sqrt{7}$

$x = \pm\sqrt{7}$

Ck

$(-\sqrt{7})^2 - 7 = 0$

$(-\sqrt{7})(-\sqrt{7}) - 7 = 0$

$\sqrt{49} - 7 = 0$

$7 - 7 = 0$

$0 = 0$ ✓

Apr 13-11:23 AM

$(x+2)^2 + 5 = 0$

$\sqrt{(x+2)^2} = \pm\sqrt{-5}$

$x+2 = \pm i\sqrt{5}$

$x = -2 \pm i\sqrt{5}$ $(a+bi)$

Ck

$x = -2 - i\sqrt{5}$

$(-2 - i\sqrt{5} + 2)^2 + 5 = 0$

$(-i\sqrt{5})^2 + 5 = 0$

$(-i\sqrt{5})(-i\sqrt{5}) + 5 = 0$

$i^2 \cdot 5 + 5 = 0$

$(-1) \cdot 5 + 5 = 0$

$-5 + 5 = 0$

$0 = 0$ ✓

Apr 13-11:26 AM

$(2x-5)^2 + 16 = 0$

$\sqrt{(2x-5)^2} = \pm\sqrt{-16}$

$2x - 5 = \pm 4i$

$2x = 5 \pm 4i$

$x = \frac{5 \pm 4i}{2}$

$x = \frac{5}{2} \pm 2i$

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$x = \frac{5 - 4i}{2}$

$\left(\frac{2}{1}\left(\frac{5-4i}{2}\right) - 5\right)^2 + 16 = 0$

$(5 - 4i - 5)^2 + 16 = 0$

$(-4i)^2 + 16 = 0$

$(-4i)(-4i) + 16 = 0$

$16i^2 + 16 = 0$

$16(-1) + 16 = 0$

$-16 + 16 = 0$

$0 = 0$ ✓

Apr 13-11:39 AM

$\sqrt{(-3x+4)^2} = \pm\sqrt{0}$

$-3x + 4 = 0$

Apr 13-11:42 AM