Solving Quadratic Equations by Finding Square Roots

Overview of problems

Example Set: A

Solve the equation if there are no real solutions explain why

$4x^2 = 400$

$t^2 - 3 = -15$

$2x^2 - 9 = 11$

$\frac{1}{2}x^2 - 3 = 5$

Example Set: B

Solve the equation if there are no real solutions explain why

$$-8x^2 + 6 = -2x^2 - 12$$

$$2(x^2 - 1) = -3(x^2 + 2)$$

$$4x^2 + 9 = 5(x^2 + 1)$$

Example Set: C

Solve the equation if there are no real solutions explain why. (use a calculator to help you solve)

$(x+2)^2 = 25$

$3(x-1)^2 = 36$

$.48x^2 - .75 = 3.25$

Solving Quadratic Equations by Finding Square Roots

Overview of problems- KEY

Example Set: A

Solve the equation if there are no real solutions explain why

$4x^2 = 400$ $\quad x = \pm 10$

$t^2 - 3 = -15$ $\quad t = \sqrt{-12}$ (not real number)

$2x^2 - 9 = 11$ $\quad x = \pm\sqrt{10}$

$\frac{1}{2}x^2 - 3 = 5$ $\quad x = \pm 4$

Example Set: B

Solve the equation if there are no real solutions explain why

$-8x^2 + 6 = -2x^2 - 12$ $\quad x = \pm\sqrt{3}$

$2(x^2 - 1) = -3(x^2 + 2)$ $\quad x = \sqrt{\frac{-4}{5}}$ not real number

$4x^2 + 9 = 5(x^2 + 1)$ $\quad x = \pm 2$

Example Set: C

Solve the equation if there are no real solutions explain why. (use a calculator to help you solve)

$(x+2)^2 = 25$ $x_1 = 3$ $x_2 = -7$

$3(x-1)^2 = 36$ $x = 1 \pm \sqrt{12}$

$.48x^2 - .75 = 3.25$ $x = \pm\sqrt{8.3}$