Quiz

Identify a, b and c.

1) $3x^2 - 5x - 42 = 0$

$a = 3 \quad b = -5 \quad c = -42$

solve with the quadratic formula

$\frac{3-11}{4} = \frac{-8}{4} = -2$

2) $2x^2 - 3x - 14 = 0$

$\sqrt{9+112}$

$x = \frac{-(-3) \pm \sqrt{(-3)^2 - 4(2)(-14)}}{2(2)} = \frac{3 \pm \sqrt{121}}{4}$

$= \frac{3 \pm 11}{4}$

$\frac{3+11}{4} = \frac{14}{4} = \frac{7}{2} = 3.5$

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Quadratic Methods

Objective: I can determine which method is best for solving a quadratic problem.

When would you use each method?

Square root:

Factor:

Quadratic formula:

Choose the method and solve for x

1) $x^2 + 2x = 35$

-35

$1x^2 + 2x - 35 = 0$

$7 - 5 = 2$

$(x+7)(x-5) = 0$

$x+7=0$ $\quad x-5=0$

$-7 \quad -7 \quad +5 \quad +5$

$x = -7 \quad x = 5$

3) $9x^2 - 1 = 800$

$+1 \quad +1$

$\frac{9x^2}{9} = \frac{801}{9}$

$\sqrt{x^2} = \sqrt{89}$

$x = \pm\sqrt{89}$

Choose the method and solve for x

5 $x^2 = -12 - 2x$

$+12 \quad +2x$

$x^2 + 2x + 12 = 0$

$1 \quad 12$

$2 \quad 6$

$3 \quad 4$

$4 - 48$

$x = \frac{-2 \pm \sqrt{(2)^2 - 4(1)(12)}}{2(1)}$

$x = \frac{-2 \pm \sqrt{-44}}{2}$

$x = \frac{-2 \pm i\sqrt{44}}{2}$

7 $x^2 + x = 0$

$x(x+1) = 0$

$x = 0$ $\quad x + 1 = 0$

$x = -1$

$x^2 + x = 0$

$-x \quad -x$

$\frac{x^2}{x} = \frac{-x}{x}$

$x = -1 \quad x = 0$

Choose the method and solve for x

13

$x^2 = -15 + 8x$

$+15 - 8x$

$x^2 - 8x + 15 = 0$

$-5 - 3 = -8$

$x - 5 = 0 \quad x - 3 = 0$

$x = 5 \quad x = 3$

17

$9x^2 - 22 = -6x$

$+6x$

$9x^2 + 6x - 22 = 0$

$x = \frac{-6 \pm \sqrt{6^2 - 4(9)(-22)}}{2(9)}$

$x = \frac{-6 \pm 28.7}{18}$

$\frac{(-6 + 28.7)}{18}$

1.2

$\frac{(-6 - 28.7)}{18}$

-1.9

15) $4x^2 - 10 = 134$

$+10 \quad +10$

$\frac{4x^2}{4} = \frac{144}{4}$

$\sqrt{x^2} = \sqrt{36}$

$x = \pm 6$

11) $12a^2 - 4a = -12$

$+12$

$12a^2 - 4a + 12 = 0$

$a = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(12)(12)}}{2(12)}$

$a = \frac{4 \pm \sqrt{-560}}{24}$

$a = \frac{4 \pm 4i\sqrt{35}}{24}$

$a = \frac{1 \pm i\sqrt{35}}{6}$

$a = \frac{4 \pm i\sqrt{560}}{24}$

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