

Quiz 8.2

1 (2 points) Solve the quadratic equation using the quadratic formula.

$$2x = x^2 + 7$$

2. (2 points) Determine the discriminant of the quadratic equation. Use the value of the discriminant to determine whether the quadratic equation has two rational solutions, two irrational solutions, one repeated real solution, or two complex solutions that are not real.

$$3z^2 + 2z + 5 = 0$$

3. (2 points) Solve the equation using any method you wish.

$$\frac{1}{3}x^2 + \frac{2}{9}x - 1 = 0$$

Mar 23-9:43 AM

A reminder of last time

Solve using the square root property

$$p^2 - 9 = 0$$

$$(x + 5)^2 + 24 = 0$$

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8.1B Solving Quadratic equations by completing the square

Remember:

$$x^2 + 2px + p^2 = (x + p)^2$$

determine the number that must be added to the expression to make it a perfect square trinomial. Then factor the expression.

1+5
2+4
3+3
-1+7
-2+8
-3+9
-4+10

$$x^2 + 6x + 9$$

$$(x + 3)(x + 3)$$

$$(x + 3)^2$$

$$\frac{6}{2} = 3$$

$$3^2 = 9$$

You Try

$$w^2 + 3w + \frac{9}{4}$$

$$\left(\frac{3}{2}\right)^2 = \frac{9}{4}$$

$$\left(w + \frac{3}{2}\right)^2$$

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Solve by completing the square.

$$x^2 + 6x + 1 = 0$$

$$x^2 + 6x = -1$$

$$x^2 + 6x + 9 = -1 + 9$$

$$(x+3)^2 = 8$$

$$x+3 = \pm 2\sqrt{2}$$

$$x = \pm 2\sqrt{2} - 3$$

$$\frac{6}{2} = 3$$

$$3^2 = 9$$

Solve by completing the square.

$$q^2 + 7q + 7 = 0$$

$$q^2 + 7q = -7$$

$$q^2 + 7q + \frac{49}{4} = \frac{21}{4}$$

$$\sqrt{\left(q + \frac{7}{2}\right)^2} = \sqrt{\frac{21}{4}}$$

$$q + \frac{7}{2} = \frac{\sqrt{21}}{2}$$

$$q = \frac{\sqrt{21}}{2} - \frac{7}{2}$$

$$\frac{7}{2} \quad \frac{49}{4}$$

$$\frac{21}{4} + \frac{49}{4} = \frac{70}{4}$$

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Mar 23-10:01 AM

You Try

$$b^2 + 2b - 8 = 0$$

$$b^2 + 2b = 8$$

$$b^2 + 2b + 1 = 9$$

$$(b+1)^2 = 9$$

$$b+1 = \pm 3$$

$$p^2 - 3p - 2 = 0$$

$$b = 2, -4$$

Solve by completing the square.

$$2x^2 + 4x + 3 = 0$$

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Solve by completing the square.

$$2z^2 - 5z + 1 = 0$$

You Try

$$2q^2 + 6q - 1 = 0$$

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Nov 1-1:40 PM