Completing the square

Example 1

Express $x^2 - 4x + 9$ in completed square form

$(x - 2)^2 - 4 + 9$

$(x - 2)^2 + 5$

Example 2

Express in completed square form to solve $x^2 - 8x = 9$

$(x - 4)^2 - 16 = 9$

$(x - 4)^2 = 25$

$x - 4 = \pm 5$

$x = 4 \pm 5$

$x = 9 \quad x = -1$

Try these

Express in completed square from

1. $x^2 + 10x + 15$

2. $x^2 - 6x - 3$

3. $x^2 - 14x + 49$

4. $x^2 - 2x + 4$

5. $x^2 + 6x + 5 = 0$

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

7. $x^2 - 10x = 24$

8. $x^2 + 4x = 21$

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1. $(x + 5)^2 - 10$

2. $(x - 3)^2 - 12$

3. $(x - 7)^2$

4. $(x - 1)^2 + 3$

5. $x = -1 \quad x = -5$

6. $x = 3 \quad y = 5$

7. $x = 12 \quad x = -2$

8. $x = 3 \quad x = -7$