Questions: Completing the square

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Summary

A selection of questions for the study guide on completing the square.

Before attempting these questions, it is highly recommended that you read Guide: Completing the square.

Q1

Express each of the following quadratic expressions in the form $(x+p)^2+q$, where p, q are numbers.

1.1. $x^2-2x+15$.

1.2. y^2-6y+8.

1.3. $x^2+8x+20$.

1.4. $m^2-26m+25$

1.5. $n^2+6n+50$.

1.6. $x^2+2x+144$.

1.7. h^2-3h-3.

1.8. x^2+x-3.

1.9. $x^2-13x+43$.

1.10. $y^2-8y+16$.

1.11. $x^2+13x+9$.

1.12. $m^2+3m+33$.

Q2

Express each of the following quadratic expressions in the form $a(x+p)^2+q$, where a, p, q are numbers.

2.1. $2x^2-12x+14$.

2.2. $5y^2-10y+4$.

2.3. $4x^2+32x+68$.

2.4. $2m^2 + 2m + 2$

2.5. $3x^2 - 2x + 5$.

2.6. $4x^2 - 4x + 1$.

2.7. $2h^2 - 3h + 1$.

2.8. $3x^2 + 5x + 2$.

Q3

Using your working from Q1 and Q2, solve the following quadratic equations.

3.1. $y^2 - 6y + 8 = 0$.

3.2. $m^2 - 26m + 25 = 0$.

3.3. $x^2 + 8x + 20 = 0$.

3.4. $4x^2 - 4x + 1 = 0$.

3.5. $4x^2 + 32x + 68 = 0$.

3.6. $3x^2 + 5x + 2 = 0$.

After attempting the questions above, please click this link to find the answers.

Version history and licensing

v1.0: initial version created 09/24 by tdhc.