

# Questions: Factorization

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## Summary

A selection of questions for the study guide on factorization.

*Before attempting these questions, it is highly recommended that you read [Guide: Factorization](#).*

## Q1

Express each of the following expressions in their simplest factorized form.

- 1.1.  $7x + 35$
- 1.2.  $3x - 51$
- 1.3.  $6m + 3n$
- 1.4.  $5f + 10 + 15k$
- 1.5.  $10x - 2 + 3y^2 + 3y$
- 1.6.  $9xy - 3x$
- 1.7.  $a^2 + ab$
- 1.8.  $4m^2 - 8nm + 12m$
- 1.9.  $12wx^2 + 16wx$
- 1.10.  $a^3b + ab^2 + ab^3$
- 1.11.  $x(x - 6) + 3(6 - x)$
- 1.12.  $3w + 3z + xw + xz$
- 1.13.  $2ab + b^2 - b - 2a$
- 1.14.  $a^2b + 3a^2 + ab + 3a - 2b - 6$

## Q2

Express each of the following expressions in their simplest factorized form.

- 2.1.  $x^2 + 6x + 5$

- 2.2.  $x^2 - 3x - 4$
- 2.3.  $x^2 - 4x + 3$
- 2.4.  $2x^2 - 13x + 21$
- 2.5.  $5x^2 - 10x + 5$
- 2.6.  $x^2 - xy - 6y^2$
- 2.7.  $12x^2y^2 + 8xy^2 - 4y^2$
- 2.8.  $x^2 - 4yx - x + 4y$
- 2.9.  $x^2 + y^2 - 2xy$
- 2.10.  $x^2 - y^2$
- 2.11.  $9x^2 + 3x - 2$

## Q3

Using your workings from Q1 and Q2, solve the following expressions for  $x$  only.

- 3.1.  $7x + 35 = 0$
  - 3.2.  $x(x - 6) + 3(6 - x) = 0$
  - 3.3.  $x^2 - 4x + 3 = 0$
  - 3.4.  $12x^2y^2 + 8xy^2 - 4y^2 = 0$
  - 3.5.  $x^2 - 4yx - x + 4y = 0$
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After attempting the questions above, please click [this link](#) to find the answers.

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## Version history and licensing

v1.0: initial version created 04/25 by Millie Pike, as part of a University of St Andrews VIP project.

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