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*](../studyguides/factorization.qmd)*.*

## 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^{3}b+ab^{2}+ab^{3}$

1.11. $ x\left(x−6\right)+3\left(6−x\right)$

1.12. $ 3w+3z+xw+xz$

1.13. $ 2ab+b^{2}−b−2a$

1.14. $ a^{2}b+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^{2}y^{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\left(x−6\right)+3\left(6−x\right)=0$

3.3. $ x^{2}−4x+3=0$

3.4. $ 12x^{2}y^{2}+8xy^{2}−4y^{2}=0$

3.5. $ x^{2}−4yx−x+4y=0$

[After attempting the questions above, please click this link to find the answers.](../answers/as-factorization.qmd)

## 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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