



Maths-it Podcast H-07

Higher GCSE Revision

Manipulating expressions

Topics

Collecting like terms – Expanding brackets – Taking out common factors – Factorising quadratics
Difference of two squares – Cancelling common factors in rational expressions

Questions



1. (a) Simplify

(i) $5p + 3q + p - 4q$

..... (2)

(ii) $3x \times 5xy^2$

..... (1)

(iii) $5a^2 + 7a + b - 2a$

..... (1)

(b) Expand and simplify

(i) $4(3a + b) - 2(2b - a)$

..... (2)

(ii) $(s + 2t) + (3s - t) - (t - 2s)$

..... (2)

(iii) $(x + 4y)(2x - y)$

..... (2)

(Total 10 marks)



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2. Factorise completely

(a) $12x + 3xy$

..... (2)

(b) $9a^2b + 12ab^2 - 3ab$

..... (2)

(c) $2x^2 + 3x - 5$

..... (2)

(d) $9y^2 - z^2$

..... (2)
(Total 8 marks)

3. (a) Simplify, $\frac{9x^4 \times 4y^2}{12xy^3}$

..... (2)

(b) Simplify fully, $\frac{3x^2 - 12x}{x^2 - 7x + 12}$

..... (3)
(Total 5 marks)



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4. (a) Factorise

(i) $x^2 - 4x$

..... (1)

(ii) $x^2 - 4$

..... (2)

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

..... (2)

(b) Simplify fully

(i) $\frac{x^2 - 4x}{x^2 - 16}$

..... (2)

(ii) $\frac{x^2 - 4}{x^2 - 4x + 4}$

..... (1)

(Total marks)