Common-factor factorisation

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. Factorise $8x + 24$. [2 marks]

The greatest common factor is 8.

Answer: $8(x + 3)$

2. Factorise $14a^2 + 21a$. [2 marks]

Extract $7a$.

Answer: $7a(2a + 3)$

3. Factorise $18xy - 12x$. [2 marks]

Extract $6x$.

Answer: $6x(3y - 2)$

4. Factorise $-10m^2 + 15m$. [2 marks]

Extract $-5m$; $5m(-2m + 3)$ is equivalent.

Answer: $-5m(2m - 3)$

5. A garden contains $4x$ rows with $3y + 2$ plants in each row. Its expanded plant count is $12xy + 8x$. Factorise this count and identify the common factor. [3 marks]

Divide both terms by $4x$.

Answer: $4x(3y + 2)$; common factor $4x$.

6. Sam writes $x^3 + x^2 = x^2(x)$. Correct the answer and explain the missing term. [3 marks]

Dividing x^3 by x^2 gives x.

Dividing x^2 by x^2 gives 1, which cannot be omitted.

Answer: $x^2(x + 1)$