**This expression is the same as that expression when …**

**Introduction**

This task explores the equivalence between expanded and factorised forms of simple algebraic expressions.

Students should be familiar with the use of the distributive rule for expansion of simple expressions with positive integer coefficients such as: 2(𝑥 + 3) = 2𝑥 + 6 and 𝑥(𝑥 + 3) = 𝑥2 + 3𝑥.

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| 1. Find a positive integer value of *c* for which 𝑥2 + 8𝑥 + 𝑐 **can** be written as the product (multiplication) of two different linear expressions with positive integer coefficients.
2. Explain why this is the case for this value of *c*.
3. Find a positive integer value of *c* for which 𝑥2 + 8𝑥 + 𝑐 **cannot** be written as the product (multiplication) of two linear expressions with positive integer coefficients.
4. Explain why this is the case for this value of *c*.
5. Find the positive integer value of *c* for which 𝑥2 + 8𝑥 + 𝑐 can be written as the product (multiplication) of two **identical** linear expressions with positive integer coefficients.

          1. Explain why this is the case for this value of *c*.

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