

## Check

1. Factor each trinomial.

a)  $x^2 - 6x + 8$

The coefficient of  $x$  is \_\_\_\_\_, so the sum of the factors is \_\_\_\_\_.

The constant term is \_\_\_\_\_, so the product of the factors is \_\_\_\_\_.

Factors of _____	Sum of the factors
$1 \times \underline{\hspace{1cm}}$	$1 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
$(-1) \times \underline{\hspace{1cm}}$	$-1 - \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
$2 \times \underline{\hspace{1cm}}$	$2 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
$(-2) \times \underline{\hspace{1cm}}$	$-2 - \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$

*8 is positive, so both its factors have the same sign. The  $x$ -term is negative, so both factors must be negative.*

So, the factors of \_\_\_\_\_ are \_\_\_\_\_ and \_\_\_\_\_.

Then,  $x^2 - 6x + 8 = (x - \underline{\hspace{1cm}})(x - \underline{\hspace{1cm}})$

b)  $c^2 + 2c - 15$

The coefficient of  $c$  is \_\_\_\_\_, so the sum of the factors is \_\_\_\_\_.

The constant term is \_\_\_\_\_, so the product of the factors is \_\_\_\_\_.

Factors of _____	Sum of the factors
$1 \times (\underline{\hspace{1cm}})$	$1 - \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
$(-1) \times \underline{\hspace{1cm}}$	$-1 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
$3 \times (\underline{\hspace{1cm}})$	$3 - \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
$(-3) \times \underline{\hspace{1cm}}$	$-3 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$

The factors of \_\_\_\_\_ are \_\_\_\_\_ and \_\_\_\_\_.

So,  $c^2 + 2c - 15 = (c - \underline{\hspace{1cm}})(c + \underline{\hspace{1cm}})$

## Practice

1. Expand, then simplify.

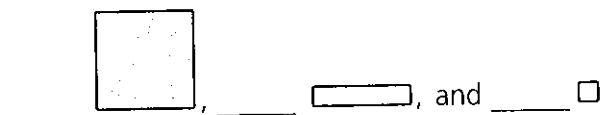
a)  $(x + 3)(x + 5)$

Use algebra tiles to make a rectangle.

Use \_\_\_\_\_ and \_\_\_\_\_ as the length.

Use \_\_\_\_\_ and \_\_\_\_\_ as the width.

To make the rectangle, use these tiles:



So,  $(x + 3)(x + 5) = x^2 + \underline{\hspace{1cm}}x + \underline{\hspace{1cm}}$

Sketch the tiles.

Label the length and width.

