

# Factoring Trinomials I

## Example

Factor  $x^2 + 8x + 12$ .

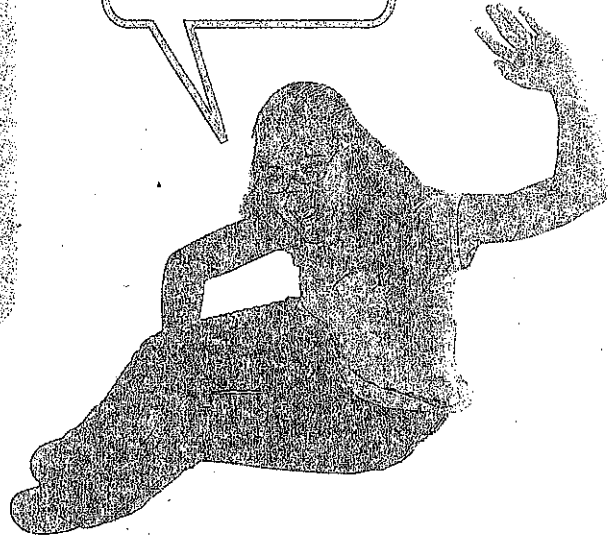
Find a pair of factors of 12 whose sum is 8.

Factors of 12	Sum of Factors
1, 12	13
2, 6	8
3, 4	7

The factors we need are 2 and 6.

$$x^2 + 8x + 12 = (x + 2)(x + 6)$$

The FOIL method is a good way to check your answers!



Factor the trinomial.

1  $x^2 + 7x + 12$

2  $y^2 - 9y + 14$

3  $c^2 - 6c + 8$

4  $a^2 - 6a - 16$

5  $f^2 + 8f - 9$

6  $x^2 + 8x + 7$

7  $b^2 - 3b - 18$

8  $y^2 + 5y - 36$

9  $x^2 - 12x + 20$

10  $d^2 + 11d + 24$

11  $m^2 + 24m - 25$

12  $x^2 - x - 6$

A  $(x + 1)(x + 2)$  L  $(x + 2)(x + 6)$  E  $(x + 3)(x + 4)$

I  $(y + 2)(y + 7)$  A  $(y - 2)(y - 7)$  D  $(y - 1)(y - 14)$

D  $(c - 4)(c - 2)$  H  $(c + 4)(c + 2)$  L  $(c - 1)(c - 8)$

K  $(a - 8)(a - 2)$  L  $(a - 8)(a + 2)$  F  $(a + 8)(a - 2)$

C  $(f - 9)(f - 1)$  J  $(f - 9)(f + 1)$  L  $(f + 9)(f - 1)$

F  $(x + 3)(x + 4)$  H  $(x + 1)(x + 7)$  G  $(x - 1)(x - 7)$

F  $(b - 6)(b + 3)$  J  $(b + 9)(b + 2)$  K  $(b + 6)(b - 3)$

B  $(y + 12)(y - 3)$  C  $(y + 9)(y + 4)$  G  $(y + 9)(y - 4)$

C  $(x - 2)(x - 10)$  J  $(x + 2)(x + 10)$  K  $(x - 4)(x - 5)$

J  $(d + 6)(d + 4)$  K  $(d + 8)(d + 3)$  B  $(d + 2)(d + 12)$

A  $(m + 5)(m + 5)$  B  $(m - 25)(m + 1)$  J  $(m + 25)(m + 1)$

E  $(x + 3)(x - 2)$  B  $(x - 3)(x + 2)$  D  $(x - 6)(x + 1)$

