

Factor Completely

a $(x-p)(x-q)$

1. $x^2 + 2x - 15$

$(x+5)(x-3)$

$\frac{-15}{5 \cdot -3}$

2. $3x^2 - 27x + 60$

$3(x^2 - 9x + 20)$

$3(x-4)(x-5)$

$\frac{20}{-4 \cdot -5}$

3. $3x^2 - 5x - 2$

$(3x^2 - 6x) + (x - 2)$

$3x(x-2) + 1(x-2)$

$(3x+1)(x-2)$

Split
middle
term

$(3)(-2) = -6$
 $-6 \cdot 1$

4. $x^2 - 36$

$(x+6)(x-6)$

5. $12x^2 - 2x - 2$

$2(6x^2 - x - 1)$

$(6x^2 - 3x) + (2x - 1)$

$3x(2x-1) + 1(2x-1)$

$2(3x+1)(2x-1)$

$\frac{-6}{-3+2}$

6. $4x^2 - 24x$

$4x(x-6)$

7. $3x^2 - 27$

$3(x^2 - 9)$

$3(x+3)(x-3)$

8. $6x^2 + 3x - 30$

$3(2x^2 + x - 10)$

$(2x^2 + 5x) - (4x - 10)$

$x(2x+5) - 2(2x+5)$

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

$\frac{-20}{5 \cdot -4}$

9. $x^2 + 16x + 48$

$(x+12)(x+4)$

10. $25x^2 - 9$

$(5x-3)(5x+3)$

11. $4x^2 + 16x + 15$

$(4x^2 + 10x) + (6x + 15)$

$2x(2x+5) + 3(2x+5)$

$(2x+3)(2x+5)$

12. $-2x^2 - 12x - 10$

$-2(x^2 + 6x + 5)$

$-2(x+5)(x+1)$

13. $8x^2 - 32$

14. $5x - 75$

15. $18x^2 - 3x - 6$