

Factoring Trinomials ($a > 1$)

Factor each completely.

1) $3p^2 - 2p - 5$

2) $2n^2 + 3n - 9$

3) $3n^2 - 8n + 4$

4) $5n^2 + 19n + 12$

5) $2v^2 + 11v + 5$

6) $2n^2 + 5n + 2$

7) $7a^2 + 53a + 28$

8) $9k^2 + 66k + 21$

$$9) 15n^2 - 27n - 6$$

$$10) 5x^2 - 18x + 9$$

$$11) 4n^2 - 15n - 25$$

$$12) 4x^2 - 35x + 49$$

$$13) 4n^2 - 17n + 4$$

$$14) 6x^2 + 7x - 49$$

$$15) 6x^2 + 37x + 6$$

$$16) -6a^2 - 25a - 25$$

$$17) 6n^2 + 5n - 6$$

$$18) 16b^2 + 60b - 100$$

Factoring Trinomials ($a > 1$)

Factor each completely.

1) $3p^2 - 2p - 5$ $\begin{matrix} -15 = -5 \cdot 3 \\ -2 = -5 + 3 \end{matrix}$

$3p^2 + 3p - 5p - 5$

$3p(p+1) - 5(p+1)$

$(3p-5)(p+1)$

2) $2n^2 + 3n - 9$ $\begin{matrix} -18 = 6 \cdot 3 \\ 3 = 6 + 3 \end{matrix}$

$2n^2 + 6n - 3n - 9$

$2n(n+3) - 3(n+3)$

$(2n-3)(n+3)$

3) $3n^2 - 8n + 4$ $\begin{matrix} 12 = -6 \cdot -2 \\ -8 = -6 + 2 \end{matrix}$

$3n^2 - 6n - 2n + 4$

$3n(n-2) - 2(n-2)$

$(3n-2)(n-2)$

4) $5n^2 + 19n + 12$ $\begin{matrix} 60 = 15 \cdot 4 \\ 19 = 15 + 4 \end{matrix}$

$5n^2 + 15n + 4n + 12$

$5n(n+3) + 4(n+3)$

$(5n+4)(n+3)$

5) $2v^2 + 11v + 5$ $\begin{matrix} 10 = 10 \cdot 1 \\ 11 = 10 + 1 \end{matrix}$

$2v^2 + 10v + v + 5$

$2v(v+5) + 1(v+5)$

$(2v+1)(v+5)$

6) $2n^2 + 5n + 2$ $\begin{matrix} 4 = 4 \cdot 1 \\ 5 = 4 + 1 \end{matrix}$

$2n^2 + 4n + n + 2$

$2n(n+2) + 1(n+2)$

$(2n+1)(n+2)$

7) $7a^2 + 53a + 28$ $\begin{matrix} 196 = 49 \cdot 4 \\ 53 = 49 + 4 \end{matrix}$

$7a^2 + 49a + 4a + 28$

$7a(a+7) + 4(a+7)$

$(7a+4)(a+7)$

8) $9k^2 + 66k + 21$ $\begin{matrix} 189 = 63 \cdot 3 \\ 66 = 63 + 3 \end{matrix}$

$9k^2 + 63k + 3k + 21$

$9k(k+7) + 3(k+7)$

$(9k+3)(k+7)$

$3(3k+1)(k+7)$

$$9) 15n^2 - 27n - 6 \quad \begin{matrix} -90 = -30 \cdot 3 \\ -27 = -30 + 3 \end{matrix}$$

$$15n^2 - 30n + 3n - 6$$

$$15n(n-2) + 3(n-2)$$

$$(15n+3)(n-2)$$

$$3(5n+1)(n-2)$$

$$11) 4n^2 - 15n - 25 \quad \begin{matrix} -100 = -20 \cdot 5 \\ -15 = -20 + 5 \end{matrix}$$

$$4n^2 - 20n + 5n - 25$$

$$4n(n-5) + 5(n-5)$$

$$(4n+5)(n-5)$$

$$13) 4n^2 - 17n + 4 \quad \begin{matrix} 16 = -16 \cdot -1 \\ -17 = -16 + -1 \end{matrix}$$

$$4n^2 - 16n - n + 4$$

$$4n(n-4) - 1(n-4)$$

$$(4n-1)(n-4)$$

$$15) 6x^2 + 37x + 6 \quad \begin{matrix} 36 = 36 \cdot 1 \\ 37 = 36 + 1 \end{matrix}$$

$$6x^2 + 36x + x + 6$$

$$6x(x+6) + 1(x+6)$$

$$(6x+1)(x+6)$$

$$17) 6n^2 + 5n - 6 \quad \begin{matrix} 36 = 9 \cdot 4 \\ 5 = 9 + 4 \end{matrix}$$

$$6n^2 + 9n - 4n - 6$$

$$3n(n+3) - 2(n+3)$$

$$(3n-2)(n+3)$$

$$10) 5x^2 - 18x + 9 \quad \begin{matrix} 45 = -15 \cdot -3 \\ -18 = -15 + 3 \end{matrix}$$

$$5x^2 - 15x - 3x + 9$$

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

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

$$12) 4x^2 - 35x + 49 \quad \begin{matrix} 196 = -28 \cdot -7 \\ -35 = -28 + -7 \end{matrix}$$

$$4x^2 - 28x - 7x + 49$$

$$4x(x-7) - 7(x-7)$$

$$(4x-7)(x-7)$$

$$14) 6x^2 + 7x - 49 \quad \begin{matrix} 294 = 21 \cdot -14 \\ 7 = 21 + -14 \end{matrix}$$

$$6x^2 + 21x - 14x - 49$$

$$3x(2x+7) - 7(2x+7)$$

$$(3x-7)(2x+7)$$

$$16) -6a^2 - 25a - 25 \quad \begin{matrix} 150 = -15 \cdot -10 \\ -25 = -15 + -10 \end{matrix}$$

$$-6a^2 - 15a - 10a - 25$$

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

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

$$18) 16b^2 + 60b - 100 \quad \begin{matrix} -100 = 20 \cdot -5 \\ 15 = 20 + -5 \end{matrix}$$

$$4(4b^2 + 15b - 25)$$

$$4b^2 + 20b - 5b - 25$$

$$4b(b+5) - 5(b+5)$$

$$4(4b-5)(b+5)$$