

Factoring trinomials ($a > 1$) Worksheet

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

8) $5x^2 - 18x + 9$

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

9) $4x^2 - 35x + 49$

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

10) $4n^2 - 17n + 4$

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

11) $6x^2 + 7x - 49$

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

12) $-6a^2 - 25a - 25$

6) $7a^2 + 53a + 28$

13) $6n^2 + 5n - 6$

7) $9k^2 + 66k + 21$

14) $16b^3 + 60b^2 - 100b$

Factoring trinomials (a > 1) Worksheet

1) $3p^2 - 2p - 5$ $3 \cdot 5 = 15$

$$\begin{array}{r} 3p^2 - 5p + 3p - 5 \\ \hline 3p \quad -5 \\ \hline p(3p-5) + 1(3p-5) \\ \hline (3p-5)(p+1) \end{array}$$

2) $2n^2 + 3n - 9$ $2 \cdot 9 = 18$

$$\begin{array}{r} 2n^2 + 6n - 3n - 9 \\ \hline 2n \quad -3 \\ \hline 2n(n+3) - 3(n+3) \\ \hline (n+3)(2n-3) \end{array}$$

3) $3n^2 - 8n + 4$ $3 \cdot 4 = 12$

$$\begin{array}{r} 3n^2 - 6n - 2n + 4 \\ \hline 3n \quad -2 \\ \hline 3n(n-2) - 2(n-2) \\ \hline (n-2)(3n-2) \end{array}$$

4) $5n^2 + 19n + 12$ $5 \cdot 12 = 60$

$$\begin{array}{r} 5n^2 + 15n + 4n + 12 \\ \hline 5n \quad 4 \\ \hline 5n(n+3) + 4(n+3) \\ \hline (n+3)(5n+4) \end{array}$$

5) $2v^2 + 11v + 5$ $2 \cdot 5 = 10$

$$\begin{array}{r} 2v^2 + v + 10v + 5 \\ \hline v \quad 5 \\ \hline v(2v+1) + 5(2v+1) \\ \hline (2v+1)(v+5) \end{array}$$

6) $7a^2 + 53a + 28$ $7 \cdot 28 = 196$

$$\begin{array}{r} 7a^2 + 49a + 4a + 28 \\ \hline 7a \quad 4 \\ \hline 7a(a+7) + 4(a+7) \\ \hline (a+7)(7a+4) \end{array}$$

7) $9k^2 + 66k + 21$

$$\begin{array}{r} 3(3k^2 + 22k + 7) \\ \hline 3(3k+1)(k+7) \end{array}$$

8) $5x^2 - 18x + 9$ $5 \cdot 9 = 45$

$$\begin{array}{r} 5x^2 - 15x - 3x + 9 \\ \hline 5x \quad -3 \\ \hline 5x(x-3) - 3(x-3) \\ \hline (x-3)(5x-3) \end{array}$$

9) $4x^2 - 35x + 49$ $4 \cdot 49 = 196$

$$\begin{array}{r} 4x^2 - 28x - 7x + 49 \\ \hline 4x \quad -7 \\ \hline 4x(x-7) - 7(x-7) \\ \hline (x-7)(4x-7) \end{array}$$

10) $4n^2 - 17n + 4$ $4 \cdot 4 = 16$

$$\begin{array}{r} 4n^2 - 1n - 16n + 4 \\ \hline 4n \quad -1 \\ \hline n(4n-1) - 4(4n-1) \\ \hline (4n-1)(n-4) \end{array}$$

11) $6x^2 + 7x - 49$ $6 \cdot 49 = 294$

$$\begin{array}{r} 6x^2 + 21x - 14x - 49 \\ \hline 3x \quad -7 \\ \hline 3x(2x+7) - 7(2x+7) \\ \hline (2x+7)(3x-7) \end{array}$$

12) $-6a^2 - 25a - 25$ $6 \cdot 25 = 150$

$$\begin{array}{r} -1(6a^2 + 25a + 25) \\ \hline -1(6a^2 + 15a + 10a + 25) \\ \hline -1[3a(2a+5) + 5(2a+5)] \\ \hline -1(2a+5)(3a+5) \end{array}$$

13) $6n^2 + 5n - 6$ $6 \cdot 6 = 36$

$$\begin{array}{r} 6n^2 - 4n + 9n - 6 \\ \hline 2n \quad 3 \\ \hline 2n(3n-2) + 3(3n-2) \\ \hline (3n-2)(2n+3) \end{array}$$

14) $16b^3 + 60b^2 - 100b$ $4 \cdot 25 = 100$

$$\begin{array}{r} 4b(4b^2 + 15b - 25) \\ \hline 4b[4b^2 + 20b - 5b - 25] \\ \hline 4b[4b(b+5) - 5(b+5)] \\ \hline 4b(b+5)(4b-5) \end{array}$$