

Find the product. Write the answer in standard form.

Monomial times Polynomial → Distribute

<p>1) $4a(11a^2 - 6a - 8)$</p> <p>$44a^3 - 24a^2 - 32a$</p>	<p>2) $-9m^2(7m^2 + 8m + 4)$</p> <p>$-63m^4 - 72m^3 - 36m^2$</p>
<p>3) $10r^6(-8r^2 + 2r + 6)$</p> <p>$-80r^8 + 20r^7 + 60r^6$</p>	<p>4) $-b^5(-9b^2 - 3b + 9)$</p> <p>$9b^7 + 3b^6 - 9b^5$</p>

Binomial times Binomial → FOIL (First Outside Inside Last)

<p>5) $(x + 6)(x + 2)$</p> <p>$x^2 + \underline{2x + 6x} + 12$</p> <p>$x^2 + 8x + 12$</p>	<p>6) $(x + 6)(x - 2)$</p> <p>$x^2 - \underline{2x + 6x} - 12$</p> <p>$x^2 + 4x - 12$</p>	<p>7) $(x - 6)(x + 2)$</p> <p>$x^2 + \underline{2x - 6x} - 12$</p> <p>$x^2 - 4x - 12$</p>	<p>8) $(x - 6)(x - 2)$</p> <p>$x^2 - \underline{2x - 6x} + 12$</p> <p>$x^2 - 8x + 12$</p>
<p>9) $(x + 7)(x - 11)$</p> <p>$x^2 - \underline{11x + 7x} - 77$</p> <p>$x^2 - 4x - 77$</p>	<p>10) $(4n - 3)(2n + 7)$</p> <p>$8n^2 + \underline{28n - 6n} - 21$</p> <p>$8n^2 + 22n - 21$</p>	<p>11) $(2x - 5)(-3x - 3)$</p> <p>$-6x^2 - \underline{6x + 15x} + 15$</p> <p>$-6x^2 + 9x + 15$</p>	
<p>12) $(5x - y)(6x - 8y)$</p> <p>$30x^2 - \underline{40xy - 6xy} + 8y^2$</p> <p>$30x^2 - 46xy + 8y^2$</p>	<p>13) $(u - v)(2u - 8v)$</p> <p>$2u^2 - \underline{8uv - 2uv} + 8v^2$</p> <p>$2u^2 - 10uv + 8v^2$</p>	<p>14) $(-8m + 6n)(2m - 4n)$</p> <p>$-16m^2 + \underline{32mn + 12mn} - 24n^2$</p> <p>$-16m^2 + 44mn - 24n^2$</p>	

Polynomial times Polynomial - Distribute each term in 1st to each term in 2nd

<p>15) $(8b + 2)(-5b^2 + 11b - 8)$</p> $\begin{array}{r} -40b^3 + 88b^2 - 64b \\ -10b^2 + 22b - 16 \\ \hline -40b^3 + 78b^2 - 42b - 16 \end{array}$	<p>16) $(2v + 4)(10v^2 + 2v + 1)$</p> $\begin{array}{r} 20v^3 + 4v^2 + 2v \\ + 40v^2 + 8v + 4 \\ \hline 20v^3 + 44v^2 + 10v + 4 \end{array}$
<p>17) $(-2x - 2)(3x^2 + 11x - 5)$</p> $\begin{array}{r} -6x^3 - 22x^2 + 10x \\ -6x^2 - 22x + 10 \\ \hline -6x^3 - 28x^2 - 12x + 10 \end{array}$	<p>18) $(-4a - 10)(-11a^2 + 12a + 11)$</p> $\begin{array}{r} 44a^3 + 48a^2 - 44a \\ + 110a^2 - 120a - 110 \\ \hline 44a^3 + 158a^2 - 164a - 110 \end{array}$
<p>19) $(4n^2 + 11n - 11)(3n^2 - 9n + 5)$</p> $\begin{array}{r} 12n^4 - 36n^3 + 20n^2 \\ + 33n^3 - 99n^2 + 55n \\ - 33n^2 + 99n - 55 \\ \hline 12n^4 - 3n^3 - 112n^2 + 154n - 55 \end{array}$	<p>20) $(2k^2 + 7k + 9)(-k^2 - 10k - 2)$</p> $\begin{array}{r} -2k^4 - 20k^3 - 4k^2 \\ - 7k^3 - 70k^2 - 14k \\ - 9k^2 - 90k - 18 \\ \hline -2k^4 - 27k^3 - 83k^2 - 104k - 18 \end{array}$

Special Products

Row 1:
Sum and Difference
Result:
Binomial

Row 2:
Perfect square
Result:
Trinomial

<p>21) $(v + 5)(v - 5)$</p> $\begin{array}{r} v^2 - 5v + 5v - 25 \\ \hline v^2 - 25 \end{array}$	<p>22) $(2x - 1)(2x + 1)$</p> $\begin{array}{r} 4x^2 + 2x - 2x - 1 \\ \hline 4x^2 - 1 \end{array}$	<p>23) $(6b - 4)(6b + 4)$</p> $\begin{array}{r} 36b^2 + 24b - 24b - 16 \\ \hline 36b^2 - 16 \end{array}$
<p>24) $(k + 6)^2$ means: $(k + 6)(k + 6)$</p> $\begin{array}{r} k^2 + 6k + 6k + 36 \\ \hline k^2 + 12k + 36 \end{array}$	<p>25) $(5x - 6)^2$ means: $(5x - 6)(5x - 6)$</p> $\begin{array}{r} 25x^2 - 30x - 30x + 36 \\ \hline 25x^2 - 60x + 36 \end{array}$	<p>26) $(a + 8)^2$ means: $(a + 8)(a + 8)$</p> $\begin{array}{r} a^2 + 8a + 8a + 64 \\ \hline a^2 + 16a + 64 \end{array}$

