

MULTIPLYING BINOMIALS

Key

We use the "FOIL" Method:

First **O**uter, **I**nner **L**ast

Directions: Find each product using the FOIL method. Simplify your answer.

<p>1. $(x + 2)(x + 4)$ $x^2 + 4x + 2x + 8$ $x^2 + 6x + 8$</p>	<p>2. $(y + 5)(y + 1)$ $y^2 + 1y + 5y + 5$ $y^2 + 6y + 5$</p>	<p>3. $(k + 6)(k + 3)$ $k^2 + 3k + 6k + 18$ $k^2 + 9k + 18$</p>
<p>4. $(x + 5)(x - 2)$ $x^2 - 2x + 5x - 10$ $x^2 + 3x - 10$</p>	<p>5. $(m + 3)(m - 7)$ $m^2 - 7m + 3m - 21$ $m^2 - 4m - 21$</p>	<p>6. $(x - 1)(x + 8)$ $x^2 + 7x - 1x - 8$ $x^2 + 7x - 8$</p>
<p>7. $(w - 2)(w - 3)$ $w^2 - 3w - 2w + 6$ $w^2 - 5w + 6$</p>	<p>8. $(x - 10)(x - 4)$ $x^2 - 4x - 10x + 40$ $x^2 - 14x + 40$</p>	<p>9. $(2x + 1)(x - 5)$ $2x^2 - 10x + 1x - 5$ $2x^2 - 9x - 5$</p>
<p>10. $(4x - 7)(x + 3)$ $4x^2 + 12x - 7x - 21$ $4x^2 + 5x - 21$</p>	<p>11. $(2a + 5b)(a - 4b)$ $2a^2 - 8ab + 5ab - 20b^2$ $2a^2 - 3ab - 20b^2$</p>	<p>12. $(x - 1)(5x - 4)$ $5x^2 - 4x - 5x + 4$ $5x^2 - 9x + 4$</p>
<p>13. $(3y + 1)(3y + 2)$ $9y^2 + 6y + 3y + 2$ $9y^2 + 9y + 2$</p>	<p>14. $(6a + 2)(2a + 3)$ $12a^2 + 18a + 4a + 6$ $12a^2 + 22a + 6$</p>	<p>15. $(4x + y)(7x - 2y)$ $28x^2 - 8xy + 7xy - 2y^2$ $28x^2 - xy - 2y^2$</p>
<p>16. $(8h - 3)(3h - 1)$ $24h^2 - 8h - 9h + 3$ $24h^2 - 17h + 3$</p>	<p>17. $(x + 2)(x - 2)$ $x^2 - 2x + 2x - 4$ $x^2 - 4$</p>	<p>18. $(y - 6)(y + 6)$ $y^2 + 6y - 6y - 36$ $y^2 - 36$</p>
<p>19. $(3x + 1)(3x - 1)$ $9x^2 - 3x + 3x - 1$ $9x^2 - 1$</p>	<p>20. $(x + y)(x - y)$ $x^2 - xy + xy - y^2$ $x^2 - y^2$</p>	<p>21. $(2r + s)(2r - s)$ $4r^2 - 2rs + 2rs - s^2$ $4r^2 - s^2$</p>
<p>22. $(x + 4)^2$ $(x + 4)(x + 4)$ $x^2 + 4x + 4x + 16$ $x^2 + 8x + 16$</p>	<p>23. $(2m - 5)^2$ $(2m - 5)(2m - 5)$ $4m^2 - 10m - 10m + 25$ $4m^2 - 20m + 25$</p>	<p>24. $(a + 3b)^2$ $(a + 3b)(a + 3b)$ $a^2 + 3ab + 3ab + 9b^2$ $a^2 + 6ab + 9b^2$</p>

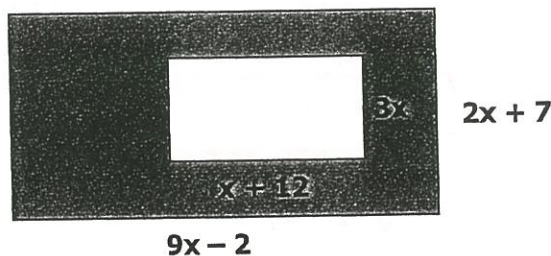
MULTIPLYING BINOMIAL X TRINOMIAL

Directions: Find each product using the FOIL method. Simplify your answer.

<p>1. $(x + 4)(x^2 + 3x - 6)$ $x^3 + 3x^2 - 6x + 4x^2 + 12x - 24$ $x^3 + 7x^2 + 6x - 24$</p>	<p>2. $(y + 1)(y^2 + 2y + 4)$ $y^3 + 2y^2 + 4y + y^2 + 2y + 4$ $y^3 + 3y^2 + 6y + 4$</p>
<p>3. $(k - 5)(k^2 - k - 8)$ $k^3 - k^2 - 8k - 5k^2 + 5k + 40$ $k^3 - 6k^2 - 3k + 40$</p>	<p>4. $(m + 3)(m^2 + 3m + 5)$ $m^3 + 3m^2 + 5m + 3m^2 + 9m + 15$ $m^3 + 6m^2 + 14m + 15$</p>
<p>5. $(x + 1)(x^2 + 2x + 1)$ $x^3 + 2x^2 + x + x^2 + 2x + 1$ $x^3 + 3x^2 + 3x + 1$</p>	<p>6. $(z + 3)(z^2 - 4z + 2)$ $z^3 - 4z^2 + 2z + 3z^2 - 12z + 6$ $z^3 - z^2 - 10z + 6$</p>
<p>7. $(3x + 1)(5x^2 + 2x - 6)$ $15x^3 + 6x^2 - 18x + 5x^2 + 2x - 6$ $15x^3 + 11x^2 - 16x - 6$</p>	<p>8. $(2x + 2)(4x^2 - 3x - 6)$ $8x^3 - 6x^2 - 12x + 8x^2 - 6x - 12$ $8x^3 + 2x^2 - 18x - 12$</p>

Geometric Application:

Find the area of the shaded region.



$9x - 2$

$$(9x - 2)(2x + 7) - (x + 12)(3x)$$

$$18x^2 + 63x - 4x - 14$$

$$18x^2 + 59x - 14 - (3x^2 + 36x)$$

$$15x^2 + 23x - 14$$