

Factoring

Name: _____

Trinomials: $ax^2 + bx + c$

Answers

Factoring $ax^2 + bx + c$ using the $a \cdot c$ methodFind two numbers where $\underline{\quad} \cdot \underline{\quad} = a \cdot c$ and $\underline{\quad} + \underline{\quad} = b$

Then rewrite the polynomial as

 $ax^2 + \underline{\quad}x + \underline{\quad}x + c$ and factor by grouping.

Factor the following. Don't forget to factor out the GCF if necessary.

1. $2x^2 + 15x + 18$ $= (2x + 3)(x + 6)$	2. $3x^2 - 11x - 20$ $= (3x + 4)(x - 5)$	3. $5y^2 + 4y - 12$ $= (5y - 6)(y + 2)$
4. $2a^2 - 17a + 8$ $= (2a - 1)(a - 8)$	5. $4x^2 + 13x - 12$ $= (4x - 3)(x + 4)$	6. $6x^2 - 13x + 6$ $= (3x - 2)(2x - 3)$
7. $5p^2 - 7p + 8$ does not factor (prime)	8. $4x^2 - 4x - 15$ $= (2x + 3)(2x - 5)$	9. $3x^2 + 11xy - 4y^2$ $= (3x - y)(x + 4y)$

$10. 7u^2 - 19uv - 6v^2$ $= (7u + 2v)(u - 3v)$	$11. 2x^2 - 10x + 8$ $= 2(x - 4)(x - 1)$	$12. 6m^2 - 20m - 16$ $= 2(3m + 2)(m - 4)$
$13. 6x^3 - x^2 - 2x$ $= x(2x + 1)(3x - 2)$	$14. -10x^2 + 25x + 125$ $= -5(2x + 5)(x - 5)$	$15. 6ab^2 + 9ab - 42a$ $= 3a(b - 2)(2b + 7)$