

[7G] Factoring $ax^2 + bx + c$

5.1
① $5y^2 - 17y + 6$

$$(5y - 2)(y - 3)$$

-2y

-15y

Add
b/c c
is +

1.6
2.3

You must show
hmk on notebook
paper to show
checking middle
term.

2.1
② $2x^2 + 13x - 24$

$$(2x - 3)(x + 8)$$

-3x

+16x

subtract
b/c c
is -

2.12
6.4
3.8

2.1
③ $2a^2 - 15ab - 27b^2$

$$(2a + 3b)(a - 9b)$$

3ab
-18ab

subtract

3.9

WS 7G

(# 2 - 28) x 2

Set I

No Mixed
Rev

NAME _____

DATE _____

7G Factoring Pattern for $ax^2 + bx + c$

Objective: To factor general quadratic trinomials with integral coefficients.

Patterns

Factoring pattern for $ax^2 + bx + c$: $(px + r)(qx + s)$.

#2-28
evens

Factor. Check by multiplying the factors. If the polynomial is not factorable, write *prime*.

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|--------------------|---------------------|---------------------|--------------------|
| 1. $2x^2 + 5x + 2$ | 2. $2n^2 - 7n + 3$ | 3. $5y^2 - 9y - 2$ | 4. $3a^2 + 7a + 2$ |
| 5. $4y^2 - 5y + 1$ | 6. $2a^2 + 11a + 5$ | 7. $5a^2 - 11a + 2$ | 8. $7y^2 - 9y + 2$ |

Factor. Check by multiplying the factors. If the polynomial is not factorable, write *prime*.

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|---------------------|----------------------|-----------------------|---------------------|
| 9. $2k^2 - 5k - 1$ | 10. $12k^2 - 8k + 1$ | 11. $4x^2 + 17x - 15$ | 12. $2a^2 + 7a + 5$ |
| 13. $8y^2 + 6y - 9$ | 14. $9x^2 + 3x - 2$ | 15. $7k^2 - 11k - 6$ | 16. $4u^2 - 8u - 5$ |

Factor. Check by multiplying the factors. If the polynomial is not factorable, write *prime*.

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|----------------------|---------------------|---------------------|
| 17. $10 - 9y - 2y^2$ | 18. $10 - x - 3x^2$ | 19. $3 - x - 10x^2$ |
| 20. $3 - 7x - 6x^2$ | 21. $10 - u - 2u^2$ | 22. $5 + 8x - 4x^2$ |

Factor. Check by multiplying the factors.

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|-------------------------|-------------------------|--------------------------|
| 23. $x^2 - xy - 20y^2$ | 24. $4a^2 - 4ab - 3b^2$ | 25. $3a^2 - 5ab - 12b^2$ |
| 26. $5a^2 + 2ab - 7b^2$ | 27. $2x^2 - xy - 3y^2$ | 28. $8y^2 - 6yz - 9z^2$ |

Mixed Review Exercises

Factor.

- | | | |
|---------------------|----------------------|---------------------|
| 1. $x^2 - 196$ | 2. $x^2 - 7x + 12$ | 3. $r^2 - 5r - 36$ |
| 4. $c^2 - 10c + 25$ | 5. $9y^2 - 121x^2$ | 6. $4a^2 - 25$ |
| 7. $y^2 + 13y + 36$ | 8. $p^2 + 14p + 49$ | 9. $9y^2 + 12y + 4$ |
| 10. $m^2 - m - 56$ | 11. $n^2 + 13n + 36$ | 12. $b^2 - 3b - 54$ |