

Ready, Set, Go!**Ready**

Topic: Creating binomial quadratics

Multiply. (Use the distributive property, write in standard form.)

1. $x(4x - 7)$ 2. $5x(3x + 8)$ 3. $3x(3x - 2)$

4. The answers to problems 1, 2, & 3 are quadratics that can be represented in standard form $ax^2 + bx + c$. Which coefficient, **a**, **b**, or **c** equals 0 for all of the exercises above?**Factor the following.** (Write the expressions as the product of two linear factors.)

5. $x^2 + 4x$ 6. $7x^2 - 21x$ 7. $12x^2 + 60x$ 8. $8x^2 + 20x$

Multiply

9. $(x + 9)(x - 9)$ 10. $(x + 2)(x - 2)$ 11. $(6x + 5)(6x - 5)$ 12. $(7x + 1)(7x - 1)$

13. The answers to problems 9,10, 11, &12 are quadratics that can be represented in standard form $ax^2 + bx + c$. Which coefficient, **a**, **b**, or **c** equals 0 for all of the exercises above?**Set**

Topic: Factoring Trinomials

Factor the following quadratic expressions into two binomials.

14. $x^2 + 14x + 45$ 15. $x^2 + 18x + 45$ 16. $x^2 + 46x + 45$

17. $x^2 + 11x + 24$ 18. $x^2 + 10x + 24$ 19. $x^2 + 14x + 24$

20. $x^2 + 12x + 36$ 21. $x^2 + 13x + 36$ 22. $x^2 + 20x + 36$

23. $x^2 - 15x - 100$ 24. $x^2 + 20x + 100$ 25. $x^2 + 29x + 100$

26. Look back at each “row” of factored expressions in problems 14 to 25 above. Explain how it is possible that the coefficient (**b**) of the middle term can be different numbers in each problem when the “outside” coefficients (**a**) and (**c**) are the same. (Recall the standard form of a quadratic is $ax^2 + bx + c$.)

GO

Topic: Taking the square root of perfect squares

Only some of the expressions inside the radical sign are perfect squares. Identify which ones are perfect squares and take the square root. Leave the ones that are not perfect squares under the radical sign. Do not attempt to simplify them. (Hint: Check your answers by squaring them. You should be able to get what you started with, if you are right.)

27. $\sqrt{(17xyz)^2}$

28. $\sqrt{(3x - 7)^2}$

29. $\sqrt{121a^2b^6}$

30. $\sqrt{x^2 + 8x + 16}$

31. $\sqrt{x^2 + 14x + 49}$

32. $\sqrt{x^2 + 14x - 49}$

33. $\sqrt{x^2 + 10x + 100}$

34. $\sqrt{x^2 + 20x + 100}$

35. $\sqrt{x^2 - 20x + 100}$