

READY, SET, GO!

Name _____

Period _____

Date _____

READY

Topic: Multiplying Binomials Using a Two-Way Table

Multiply the following binomials using the given two-way table to assist you.

Example: $(2x + 3)(5x - 7)$

	$(5x - 7)$		
$(2x + 3)$	$10x^2$	$-14x$	$= 10x^2 + x - 21$
	$+15x$	-21	

1. $(3x - 4)(7x - 5)$

2. $(9x + 2)(x + 6)$

3. $(4x - 3)(3x + 11)$

4. $(7x + 3)(7x - 3)$

5. $(3x - 10)(3x + 10)$

6. $(11x + 5)(11x - 5)$

7. $(4x + 5)^2$

8. $(x + 9)^2$

9. $(10x - 7)^2$

10. The “like-term” boxes in #'s 7, 8, and 9 reveal a special pattern. Describe the relationship between the middle coefficient (**b**) and the coefficients (**a**) and (**c**).

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SET

Topic: Factored Form of a Quadratic Function

Given the *factored form* of a quadratic function, identify the vertex, intercepts, and vertical stretch of the parabola.

11. $y = 4(x - 2)(x + 6)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

12. $y = -3(x + 2)(x - 6)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter: _____

d. Stretch _____

13. $y = (x + 5)(x + 7)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

14. $y = \frac{1}{2}(x - 7)(x - 7)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

15. $y = -\frac{1}{2}(x - 8)(x + 4)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter: _____

d. Stretch _____

16. $y = \frac{3}{5}(x - 25)(x - 9)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

17. $y = \frac{3}{4}(x - 3)(x + 3)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

18. $y = -(x - 5)(x + 5)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter: _____

d. Stretch _____

19. $y = \frac{2}{3}(x + 10)(x + 10)$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

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GO

Topic: Vertex Form of a Quadratic Equation

Given the *vertex form* of a quadratic function, identify the vertex, intercepts, and vertical stretch of the parabola.

20. $y = (x + 2)^2 - 4$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

21. $y = -3(x + 6)^2 + 3$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter: _____

d. Stretch _____

22. $y = 2(x - 1)^2 - 8$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

23. $y = 4(x + 2)^2 - 64$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

24. $y = -3(x - 2)^2 + 48$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter: _____

d. Stretch _____

25. $y = (x + 6)^2 - 1$

a. Vertex: _____

b. x-inter(s) _____

c. y-inter _____

d. Stretch _____

26. Did you notice that the parabolas in problems 11, 12, & 13 are the same as the ones in problems 23, 24, & 25 respectively? If you didn't, go back and compare the answers in problems 11, 12, & 13 and problems 23, 24, & 25.

Prove that a. $4(x - 2)(x + 6) = 4(x + 2)^2 - 64$

b. $-3(x + 2)(x - 6) = -3(x - 2)^2 + 48$

c. $(x + 5)(x + 7) = (x + 6)^2 - 1$

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