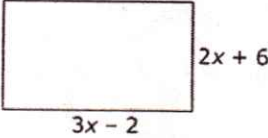


Quadratic Expressions Unit Review

What you need to know & be able to do	Things to remember	Examples	
1. Classify polynomials	Degree: x^3 : cubic x^2 : quadratic x : linear $\#$: constant Number of Terms: 1: Monomial 2: Binomial 3: Trinomial 4+: Polynomial Make sure your expressions are simplified before classifying.	1. $5x - 7$	2. -18
		3. $-2x^2 + 8 + 3x^2$	4. $4x^2 + 3x - 10 + 2(x - 4)$
2. Add and Subtract Polynomials	-Line up like terms -If subtracting, change subtraction sign to addition and change the signs of every term in the 2 nd polynomial	5. $(4x + 3x^2 - 7) + (-6x^2 + 4)$	6. $(4x^2 - 3x - 2) - (9x^2 + 3x - 7)$
3. Multiply polynomials	-Distributive Method or Box Method $-x \cdot x = x^2$	7. $5x(3x + 7)$	8. $(x - 9)(x + 6)$
		9. $(x + 4)^2$	10. $(6x + 3)(4x - 8)$

4. Factor by GCF	<p>-Break down each term and circle what factors are common to both (that comes out)</p> <p>-What is leftover stays in the parenthesis</p>	11. $x^2 - 12x$	12. $-8y^2 - 2y$
5. Factor a = 1	<p>Always check for a GCF first!</p> <p>Think of what two factors multiply to get the "c" term and add to get the "b" term</p>	13. $x^2 - 15x + 44$	14. $x^2 + 5x - 36$
		15. $x^2 - 9$	16. $x^2 - 12x + 36$
		17. $x^2 - 6x - 72$	18. $x^2 + 5x - 2$
6. Factor A not 1	Always check for a GCF first!	19. $2x^2 + 9x + 4$	20. $4x^2 - 4x - 3$

7. Factor a = 1 & GCF	Always check for a GCF first!	21. $6x^2 - 54x + 48$	22. $x^3 + 10x^2 + 24x$
8. Factor a not 1 & GCF	Always check for a GCF first!	23. $6x^2 + 8x - 8$	24. $4x^2 + 2x - 2$
9. Special Products	Difference of Two Squares: $a^2 - b^2 = (a + b)(a - b)$ "b" term = 0 Perfect Square Trinomial: $(a + b)^2 = a^2 + ab + b^2$ $(a - b)^2 = a^2 - ab + b^2$	25. $x^2 - 49$	26. $25x^2 - 9$
		27. $4x^2 - 1$	28. $x^2 - 10x + 25$
10. Area & Perimeter	Perimeter: Add up all outside sides Area: Rectangle: $A = l \times w$ Triangle: $A = \frac{1}{2}bh$	29. Find the area & perimeter of the following: 	30. The area of a rectangle is $x^2 + 7x + 6$. What is the perimeter of this rectangle?

Make sure you know your graphic organizer so you know which method to use to factor.

Multiple Choice Practice

1. Which is a factor of $x^2 - 11x + 24$?
- A. $x+3$ B. $x-3$ C. $x+4$ D. $x-4$

2. Which of the following is equivalent to the expression below?

$$9x^2 - 16$$

- A. $(3x-4)^2$ B. $(9x-4)(9x+4)$
 C. $(3x-8)(3x+8)$ D. $(3x-4)(3x+4)$

3. Which binomial is a factor of $3x^2 + 2x - 5$?

- A. $3x-1$ B. $x-1$ C. $3x-5$ D. $x-5$

4. What is the missing term in the quadratic expression below?

$$(2x-3)(x+4) = 2x^2 + \underline{\hspace{1cm}} - 12$$

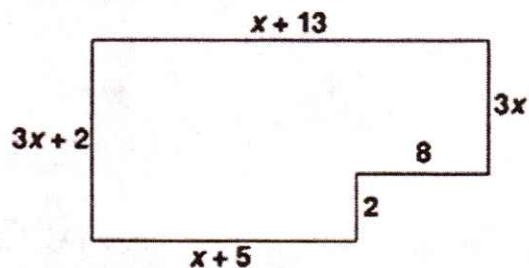
5. $(4x^2 - 2x + 8) - (x^2 + 3x - 2) =$

- A. $3x^2 + x + 6$ B. $3x^2 + x + 10$
 C. $3x^2 - 5x + 6$ D. $3x^2 - 5x + 10$

6. The sum of two binomials is $5x^2 - 6x$. If one of the binomials is $3x^2 - 2x$, what is the other binomial?

- A. $2x^2 - 4x$ B. $2x^2 - 8x$
 C. $8x^2 + 4x$ D. $8x^2 - 8x$

7. What is the perimeter of the figure shown below, which is not drawn to scale?



- A. $5x+33$ B. $5x^3+33$
 C. $8x+30$ D. $8x^4+30$

8. An equilateral triangle has a perimeter of $6x + 15$. What is the length of each of the sides of the triangle?

9. The expression below represents the area, in square meters, of a rectangle.

$$x^2 + 5x - 24$$

Which of the following pairs of expressions could represent the length and width, in meters, of the rectangle?

- A. $(x-3)$ and $(x+8)$ B. $(x-4)$ and $(x+6)$
 C. $(x-6)$ and $(x+4)$ D. $(x-8)$ and $(x+3)$