

Name: _____

Date: _____

Algebra Lessons 9.1-9.3 Homework Check

1. Find the sum $(3x^2 - 5x + 7) + (4x^2 + 8x - 3)$.

2. Find the difference $(z^3 + 4z^2 + 5z) - (-z^3 - 2z + 4)$.

3. $(2v + 5)(2v - 5)$

a. $4v^2 - 25$

b. $4v^2 + 25$

c. $4v^2 + 20v - 25$

d. $4v^2 + 20v + 25$

4. Find the product: $(x^2 - 4)^2$

5. In order from least to greatest, the side lengths (in inches) of a triangle are 8, $2x^2 + 5x - 3$, and $8x^2 - 5x - 4$.

a. How much longer is the longest side of the triangle than the second longest side?

b. Find the perimeter of the triangle.

c. A student wants to change the length of the shortest side of the triangle so that the triangle has a perimeter of $10x^2$ inches. What should the new length of the shortest side be?

6. $(x - 8)(x + 7)$

7. $3x^2(4-x^2)$

8. $-3x^2(2x^2-5x-3)$

9. $(4x+7y)^2$

10. $(5x+7)(3x-4)$

11. $(5z^2 - 3)(5z^2 + 3)$

12. $(x - 1)(x^2 - 3x + 3)$

13. $(a - 7)^2$

14. $(2x - 5)(3x + 4)$

15. $(7x - 4)(7x + 4)$

16. $-x^2(-3x^2 + 2x - 4)$

17. $(3x - 2)^2$

18. Find the sum $(-5x^2 + 7x - 2) + (2 - 3x + 4x^2)$.

19. Use a vertical format to find the product $(2x + 3)(3x^2 - 3x + 4)$. _____

20. Find the sum $(5x^4 - 5x^6 - 5) + (9x^6 - 7 - 3x^4)$. _____

21. The outside of a rectangular picture frame has length $4x + 5$ centimeters and width $2x + 3$ centimeters. The picture window inside the frame is a rectangle that is $4x - 2$ centimeters long and $x + 1$ centimeters wide.
a. Write a polynomial to describe the area (in square centimeters) of the picture window.

b. The picture frame, not including the window, is made of flat pieces of wood. Write a polynomial that describes the area (in square centimeters) of the wooden part of the frame.
