

Algebra 2

Review Worksheet 5.1 - 5.3

Name: _____

Date: _____ Hour: _____

Write each polynomial in standard form, classify it by degree and number of terms, determine the end behavior of the graph, and state the maximum number of turns, and the possible number of turns.

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

Standard form _____

Name _____

End beh. _____

Max turns _____

Poss. Turns _____

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

Standard form _____

Name _____

End beh. _____

Max turns _____

Poss. Turns _____

Describe the end behavior, the maximum amount of turns, and the possible number of turns.

3. $y = 4x^2 + 9 - 5x^4 - x^3$

End behavior _____

Max. turns _____

Possible turns _____

4. $y = 12x^4 - x + 3x^7 - 1$

End behavior _____

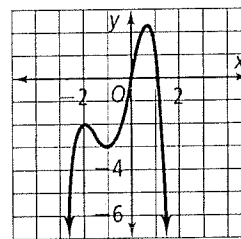
Max. turns _____

Possible turns _____

5. Given the table determine the degree of the polynomial

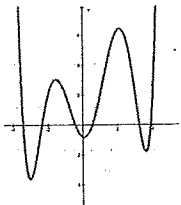
x	y
-2	52
-1	6
0	2
1	4
2	48

6. Given the graph determine the sign and the least degree of the corresponding polynomial.

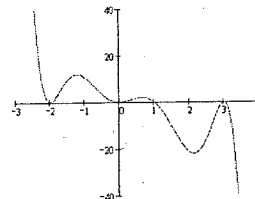


Determine (a) the least possible degree of the polynomial shown, and (b) whether the leading coefficient is positive or negative. Explain how you know.

7.



8.



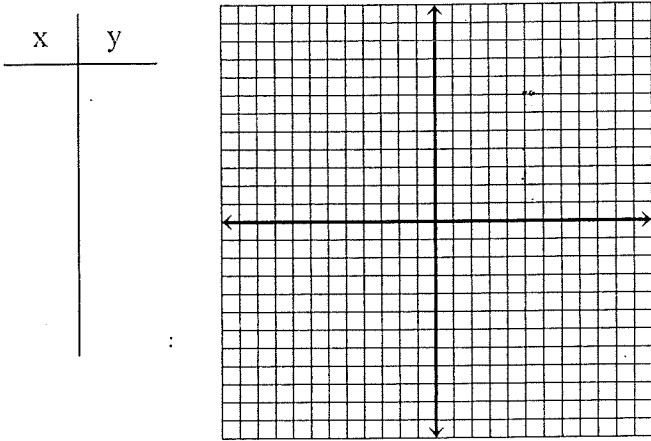
Write a polynomial with the given criteria in standard form.

9. $x = -3, 2, -4, 3$

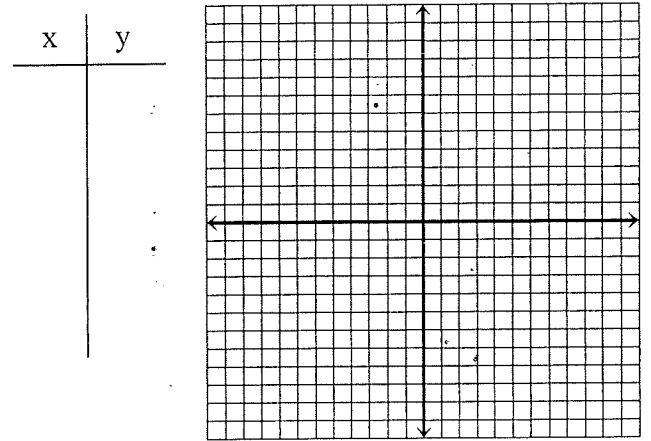
10. $x = -2, 1, 2, 5$

Find the zeros and graph the polynomial.

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

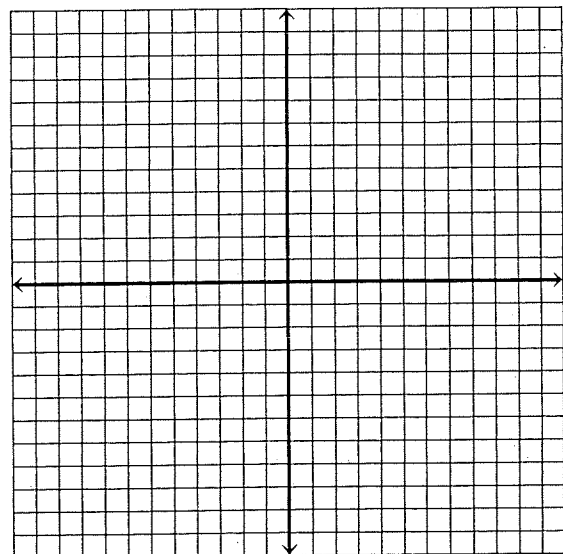


12. $y = x^3 + x^2 - 2x$



13. Factor the function $y = x^4 - 2x^3 - 8x^2$ to find the zeros, and then complete the table to help make a graph.

x	plug in x	y



14. A rectangular box is 16 in. long, 9 in. wide, and 5 in. high. If each dimension is increased by x in., what is the polynomial function in standard form that models the volume V of the box? Show your work.

Find the real and/or imaginary solutions of each equation by factoring. Watch for a GCF first!

15. $3x^3 - x = 6x^2 - 2$

16. $x^4 - 2x^2 - 48 = 0$

17. $20x^3 + 2x^2 = 6x$

18. $8x^3 = 125$

19. $12x^3 + 23x^2 - 9x = 0$

20. $x^4 + 36 = 15x^2$

21. $8x^3 + 125 = 0$

22. $4x^3 + 5x^2 = 36x + 45$

23. $x^4 - 100 = 0$

24. $12x^3 + 28x^2 - 3x = 7$