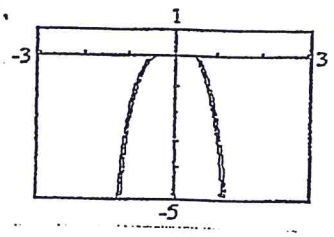
Math 3: Chapter 3 Review Worksheet

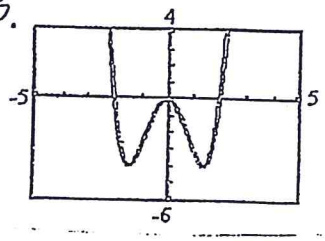
Name_____

1. Which of the following could be the graph of $f(x) = -3x^3$? Explain your choice.

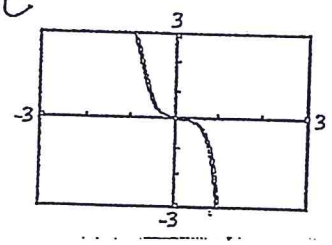
A.



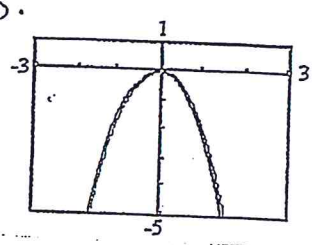
B.



C

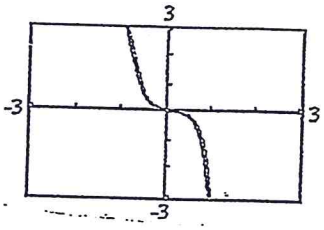


D.

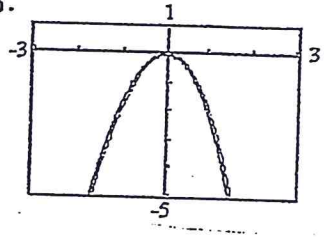


2. Which of the following could be the graph of $f(x) = \frac{3}{4}x^4 - \frac{7}{2}x^2$? Explain your choice.

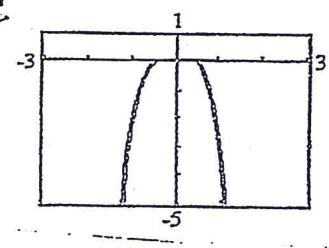
A.



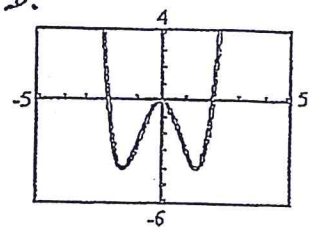
B.



C



D.



3. Add $(5x^3 - 2x^2 + 6x - 3) + (7x^2 - 8x - 5)$. What is the coefficient of x^2 in the sum?

4. Subtract $(2x^2 - 7x + 3) - (8x^2 - 2x + 10)$. What is the constant term in the difference?

5. Multiply. a. $(2x-5)^2$ b. $(x+4)^3$ c. $(x-1)(x+4)(2x-3)$

6. Expand $(3x+2)^4$ using Pascal's triangle. What degree and type of polynomial is the result?

7. Divide $2x^3 - x^2 + 3x - 5$ by $x-4$ using synthetic division. What is the degree and leading coefficient of the quotient.

8. Factor completely. a. $4x^4 - 32x$ b. $x^4 - 10x^2 + 9$

9. List all the possible rational zeros of $f(x) = 2x^3 + 5x^2 + 7x + 15$

10. Find all the zeros of $f(x) = x^3 + 4x^2 - 2x - 20$. How do any real zeros of f(x) relate to the graph of f(x)?

11. Write a polynomial function of least degree and leading coefficient of 1 with the given zeros.

a. -1, 2, 3

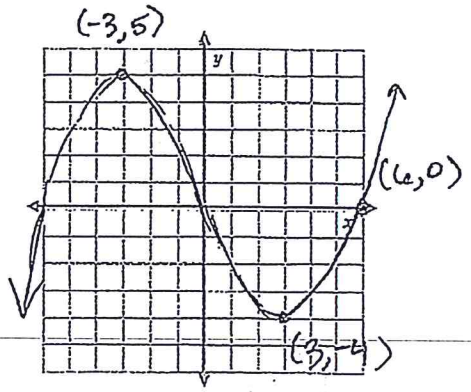
b. 5 and 2i

12. In the graph,

a. What is the point (-3, 5) called?

b. What is the point (3, -4) called?

c. What is the point (6, 0) called?



13. Write the function graphed below.