




HW L2.9

NAME _____

-  1. Expand $(m + j)^4$.
-  2. Give the second term in the expansion of $(x - 4)^7$ when written in standard form.
3. Let $f(x) = (2x + 7)^4$
- a. What is the y -intercept of the graph of f ?
- b. When written in standard form, what is the leading coefficient of $f(x)$?
-  4. In the expansion of $(x + 5)^6$ there is a term that looks like ____ x^4 . Determine what number goes in the blank. Show the work that leads to your answer.

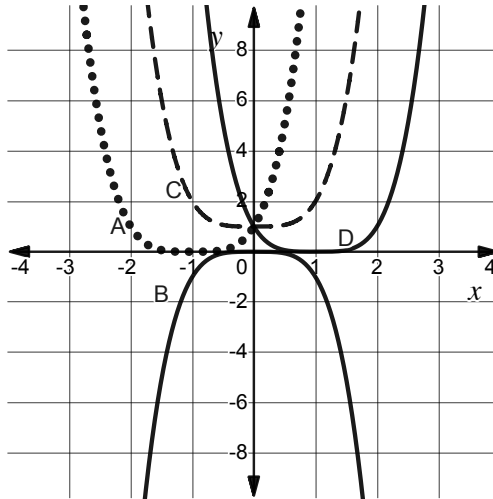
5. Let $f(x) = x^4 + 4x^3 + 6x^2 + 4x + 1$. Which of the following graphs could represent $y = f(x)$?

A) A

B) B

C) C

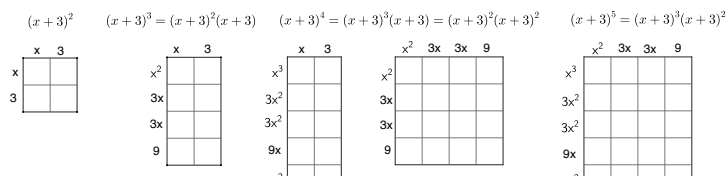
D) D



6. Explain how Pascal's Triangle is created and how the entries relate to the expansion of binomials.

7. Let $f(x) = x^3 + 3x^2 + 3x + 1$. State the zero(s) of f and their multiplicities.

8. The area models shown help demonstrate how the distributive property is used to expand binomials.



3x		
9x		
9x		
27		

3x			
9x			
9x			
27			

- a. Without combining any like terms, how many terms are in the expansion of $(x + 3)^2$? Why?
- b. Without combining any like terms, how many terms are in the expansion of $(x + 3)^3$? Why?
- c. Without combining any like terms, how many terms are in the expansion of $(x + 3)^4$? Why?
- d. Without combining any like terms, how many terms are in the expansion of $(x + 3)^5$? Why?
- e. Can you predict how many terms are in the expansion of $(x + 3)^6$, without combining like terms? How?
- f. In the expansion of $(x + 3)^5$, how many of the terms have x^5 in them? How many of the terms have x^4 in them? x^3 ? x^2 ? x ? Just a constant? (Hint: use a highlighter to mark the entries in the expansion that give a certain term).
- g. Why do you think there is not an equal amount of each term?

