

PART 1 - CALCULATOR ACTIVE QUESTIONS

1. Simplify the following expressions by adding or subtracting the polynomials.

(7 marks)

(a) $(x^3 + 9x^2 - 12) + (7x^2 - 3x + 10)$

(b) $(4x^2 + 4x - 2) - (-3 + x + 2x^2)$

(4)

(3)

2. Simplify the following expression by multiplying the polynomials.

(3 marks)

(a) $(x^2 - 2)(x^2 + 5x - 3)$

3. Given the polynomial $p(x) = 3x^2 - 4x^3 + 1 - x$.

(4 marks)

i) Write the equation in standard form: _____.

ii) State the value of the leading coefficient: _____.

iii) State the value of the constant term: _____.

iv) This polynomial is an example of : (choose one)

(A) quadratic

(B) Linear

(C) cubic

(D) quartic

(E) cannot be determined

4. Write an example of a polynomial equation that is BOTH a QUADRATIC as well as a BINOMIAL:

(2 marks)

Y = _____.

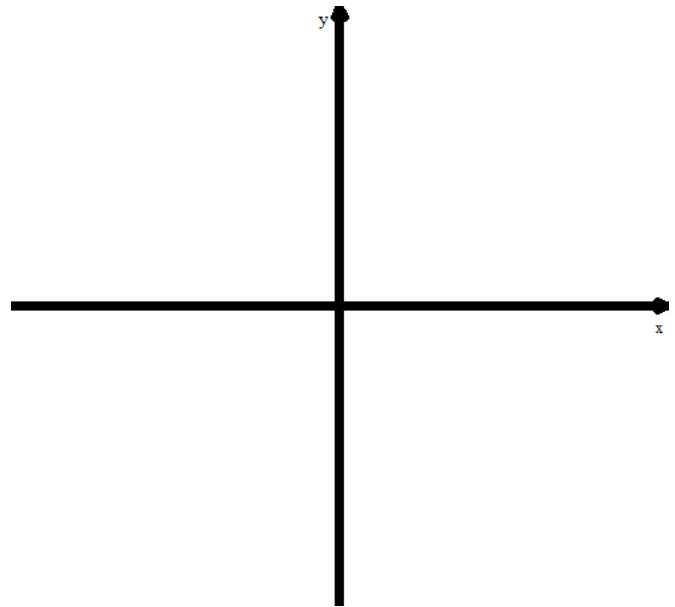
5. Here is an equation of a polynomial: $f(x) = 4x^4 + 9x^3 - 2x^2 - 24x$. Use your TI-84 calculator to graph the polynomial. Then answer the following questions.

(12 marks)

(a) State REASONABLE window settings such that you can see all zeroes, y-intercept and all turning points (max/mins), but not too much "empty space."

(b) Sketch the polynomial as seen on your TI-84. Label the zeroes and y-intercept.

| | |
|------|--|
| Xmin | |
| Xmax | |
| Ymin | |
| Ymax | |



(2)

(5)

(c) Evaluate $f\left(-\frac{3}{2}\right)$. Briefly explain HOW you determined your answer.

(d) Solve $f(x) = 50$. Briefly explain HOW you determined your answer.

(2)

(3)

Name: _____ Date : _____

IM 3 UNIT 4 Quiz V1 - Polynomial Functions
Teacher: Mr. Santowski and Mr. Smith

Score: _____

PART 2 - CALCULATOR INACTIVE QUESTIONS

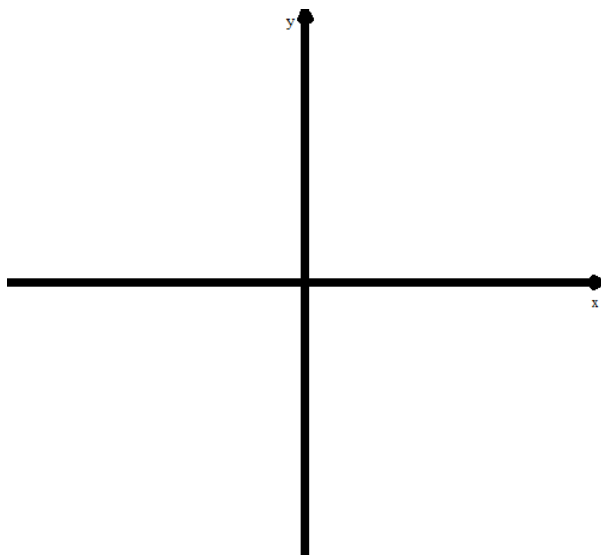
6. Here is a sketch of a polynomial. You are asked to write a POSSIBLE equation for this polynomial. Include an explanation as to HOW you determined your equation.

(5 marks)



7. Here is an equation of a polynomial: $f(x) = 2(x - 4)(x - 2)(x + 1)(x + 3)$. Sketch the graph for this equation and label the x- and y-intercepts. All other y values do NOT need to be exact! Include an explanation as to HOW you determined what the graph looked like.

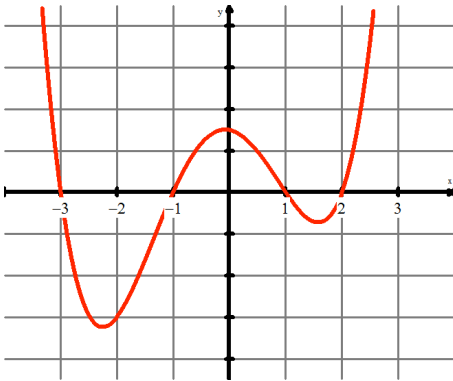
(5 marks)



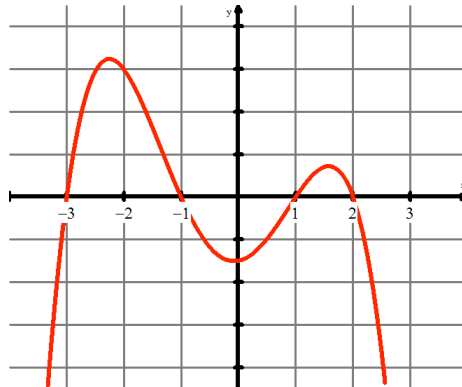
8. In this matching question, there are 4 equations and 6 graphs. Match the graph to its corresponding equations and provide explanations to show your thinking.

(10 marks)

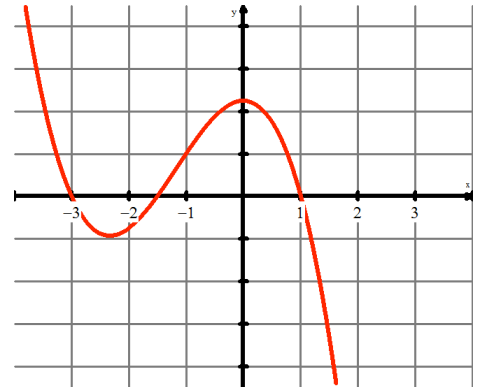
Graph #1:



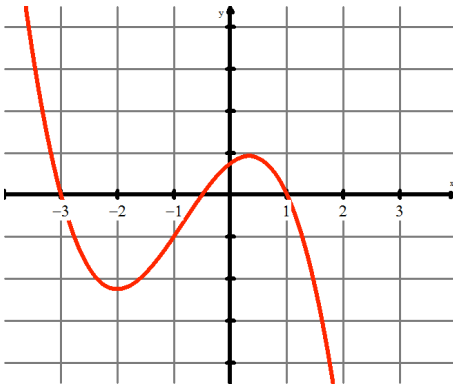
Graph 2:



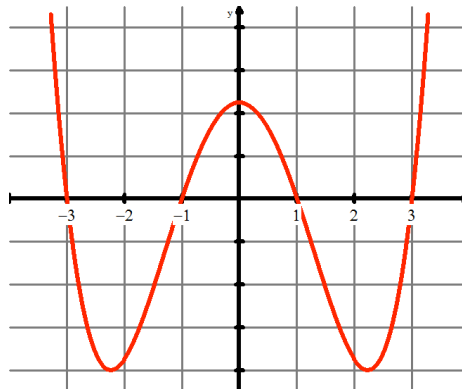
Graph #3:



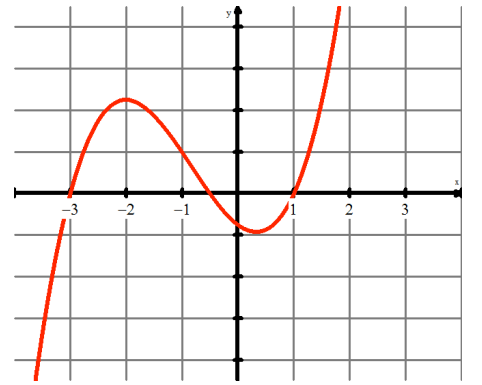
Graph 4:



Graph 5:



Graph 6:



Equation #1: $y = (x + 3)(1 - x)(2x + 1)$

Equation #2: $y = (2x + 3)(x + 3)(1 - x)$

Equation #3: $y = (x + 1)(x + 3)(x - 1)(x - 3)$

Equation #4: $y = (x + 3)(x + 1)(x - 2)(x - 1)$