

Worksheet: Review for Quest Chapter 6

Algebra II

Write your answers **NEATLY** in the column at the right

Name _____

Date _____ Hr _____

Write each polynomial in standard form. Then classify it by degree and by number of terms.

Answers

1. $3x^2(4x) + x^2(2x^2)$

2. $7x^2 + 10 + 4x^3 + 3x^2 - 4x$

3. $8x - 3x(8x)$

1.
SF _____

Name _____

2.
SF _____

Name _____

3.
SF _____

Name _____

- 4a. Find the quadratic and cubic model for the table of values (using QuadReg & CubicReg on your calculator), round to tenths place.
4b. Which model appears to give the better fit?
4c. Using the model you selected in part b, estimate the value of y when x = 29, round to the tenths.

x	-1	0	2	4	5	7	8
y	10.3	5	1	1.8	2.5	1.5	-1.4

4.
a. (quad) _____
r² = _____

(cubic) _____
r² = _____

b. Quadratic or Cubic

c. _____

5. Find the zeros of & then write in standard form:
 $y = (x^2 + 6)(x + 3)(x - 2)$

6. Find the relative maximum, relative minimum, and zeros of each function. (round hundredths)
 $y = -2x^3 + 23x^2 - 65x + 59$

7. Write a polynomial function in factored form from the given zeros. .
6, -3, 3

5.
Zeros _____

SF _____

6.
Rel Max _____

Rel Min _____

Zeros _____

7.
Factored _____

8. Write a polynomial function in factored form from the given zeros.
-5, 0, 0

9. For the function, determine the zeros. State the multiplicity of any multiple zeros.
 $f(x) = 4x^4 - 9x^2$

10. For the function, determine the zeros. State the multiplicity of any multiple zeros.
 $f(x) = 4x^5 - 12x^4 + 9x^3$

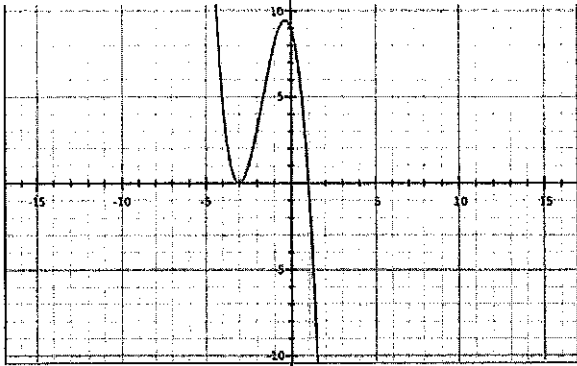
8.
Factored _____

9.
Zeros _____

10.
Zeros _____

Write your answers **NEATLY** in the column at the right

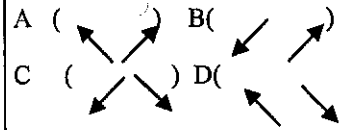
11. Consider the graph. Name the:
A) Crossing zeros
B) Touching zeros
C) Y-intercept



12. Consider the graph.
Solve for a and then
Write the equation in
factored form (include a)

13. Multiple choice. Determine the
end behavior

13a. $g(x) = 98x^6 - 13x^9 + 239$
13b. $y = -3x^3 + 40x^{21} + 765$



Answers

11.
A) _____
B) _____
C) _____

12.

13.
a. A B C D
b. A B C D

14. Is the data linear, quadratic, cubic or quartic?
State the 'a' value and the y-intercept.

X	Y
-3	161
-2	31
-1	1
0	-1
1	1
2	31
3	161

15. Is the data linear, quadratic, cubic or quartic?
State the 'a' value and the y-intercept.

X	Y
-3	-130
-2	-42
-1	-10
0	-4
1	6
2	50
3	158

14. linear, quadratic
Cubic, quartic
a = _____ y-int = _____

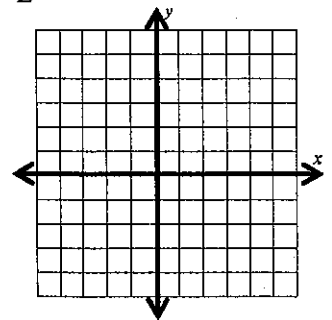
15. linear, quadratic
Cubic, quartic
a = _____ y-int = _____

16.

- 17
A _____ B _____
C. A B C D

D _____

E



16. Solve $-x^3 - 2x^2 - 3 = x^2 - 5$ by graphing. Where
necessary, round to the nearest tenths.

- 17A. State the degree of the function.
B. State the maximum number of zeros
C. Tell the end behavior of the function (look at
MC in #13)
D. State the y-intercept
E. Graph the function based on the y-intercepts and
zeros.

$$f(x) = -2(x + 1)^2(x - 1)(x + 3)$$

Polynomials Non-Calculator Review

Name _____

DO NOT USE A CALCULATOR ON THIS WORKSHEET!!!

Find the zeros of each function.

1) $y = x(x+4)(x-\frac{3}{2})$

2) $f(x) = (x-9)(x+7)(x-5)$

3) $y = x^2 + x - 2$

4) $g(x) = x^4 + 3x^3 + 2x^2$

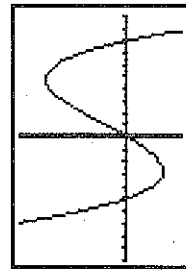
Write a polynomial function in FACTORED form with the given zeros.

5) $x = 1, -2, 3$

6) $x = 0, 1$ with a multiplicity of 2

Given the following graphs, answer the following questions.

7)



WINDOW
 Xmin=-10
 Xmax=10
 Xscl=1
 Ymin=-100
 Ymax=200
 Yscl=1
 Xpws=1

Degree: _____
 # of Linear Factors: _____
 # of Turning Points: _____

Crossing Zeros _____

Touching Zeros _____

TOTAL # of Zeros _____

Write the equation for the polynomial in factored form: _____

Circle any of the following Critical Points if the graph has them:

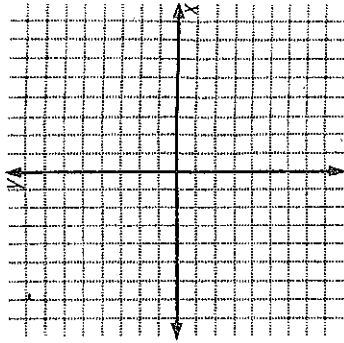
Maximum _____ Minimum _____ Relative Maximum _____ Relative Minimum _____

Complete the statement about end behavior

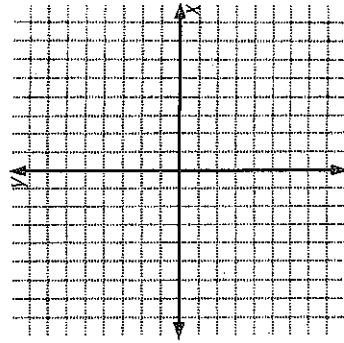
As $x \rightarrow$ _____, $f(x) \rightarrow$ _____ As $x \rightarrow$ _____, $f(x) \rightarrow$ _____

Sketch a graph of the following polynomials. NO CALCULATOR.

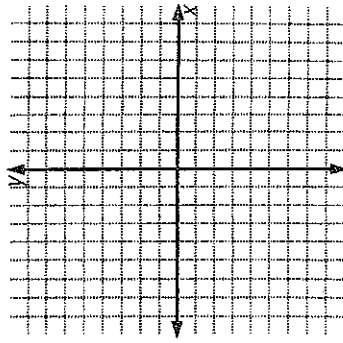
8) $y = x^2(x-3)(x+6)^4$



9) $y = -x(x+7)^2(x-5)^2(x+4)$



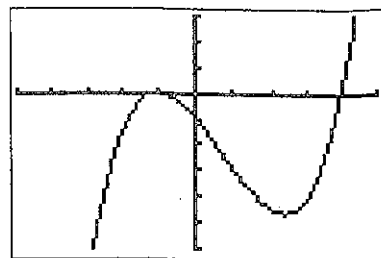
10) $f(x) = x^3 + 3x^2 - 18x$



11)

- a) How many turning points are there?
- b) What is the degree of this polynomial?
- c) How many touching zeros are there?
- d) How many crossing zeros are there?
- e) How many total zeros are there?
- f) What is the y-intercept?
- g) What are the factors?
- h) Solve for a.

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____
- g) _____
- h) _____



```

WINDOW
Xmin=-5
Xmax=5
Xscl=1
Ymin=-6
Ymax=3
Yscl=1
Xres=1

```

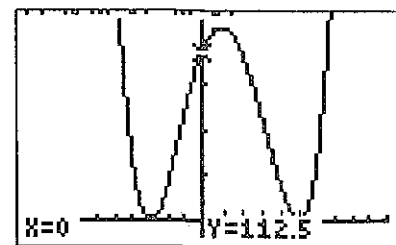
- i) Write the equation.
- j) What is the relative maximum?
- k) What is the relative minimum (approximate)
- l) Describe the end behavior.

- i) _____
- j) _____
- k) _____
- l) _____

12)

- a) How many turning points are there?
- b) What is the degree of this polynomial?
- c) How many touching zeros are there?
- d) How many crossing zeros are there?
- e) How many total zeros are there?
- f) What is the y-intercept?
- g) What are the factors?
- h) Solve for a.

- a) _____
- b) _____
- c) _____
- d) _____
- e) _____
- f) _____
- g) _____
- h) _____



```

WINDOW
Xmin=-10
Xmax=10
Xscl=1
Ymin=-10
Ymax=150
Yscl=30
Xres=1

```

- i) Write the equation.
- j) Describe the end behavior.

- i) _____
- j) _____