Name _____ Date _____

4.8 Analyzing Graphs of Polynomial Functions DAY TWO CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Graphing polynomial functions	1 - 4	12 – 17	
Finding real zeros or x-intercepts	1 – 4	6 – 11	
Finding local/relative max/min	1 - 4	6 – 11	
Increasing/decreasing in interval notation		6 – 9	
Domain/range in interval notation		6 – 9	
Odd/even function	1 - 4		
y-intercept	1 - 4		
Leading Coefficient (LC)	1 – 4		
Degree	1 - 4	10, 11	
Analyzing graphs		5	12 - 17

1–4: sketch the function using zeros, degree, y-int, max/mins, odd/even, pos/neg, LC.
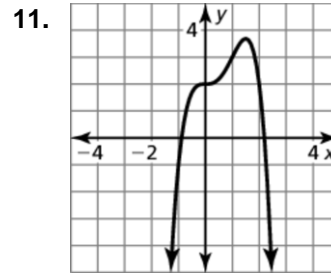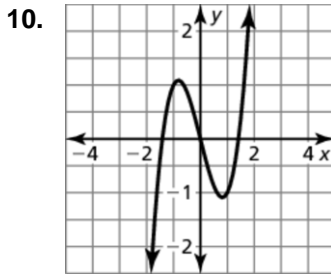
1. $f(x) = (x + 2)^2(x - 3)$

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

3. $h(x) = 2(x - 1)(x - 2)(x + 2)$

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

5. Describe and correct the error in using factors to graph $f(x) = (x - 1)^2(x + 3)$.
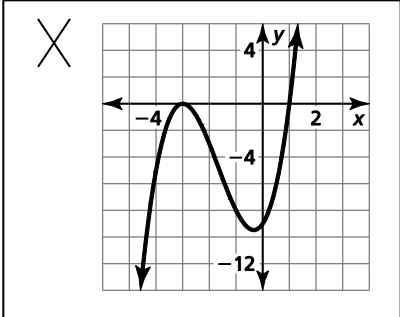
6 – 9: Sketch the function. Identify the *x*-intercepts & the points where the local maximums/minimums occur. Determine the intervals for which the function is increasing and decreasing. State the domain and range. LABEL ALL YOUR ANSWERS, ON A SEPARATE PAPER!

6. $f(x) = 2x^3 - 5x^2 + 3$

7. $g(x) = -x^4 + 2x$

8. $h(x) = x^4 - 2x^2 + 3x$

9. $f(x) = x^4 - 4x^3 + 5x - 2$

10 – 11: State the number of local maximums and local minimums. Then find the least possible degree of the function.

10.

11.

12 – 17: Match the function with its graph.

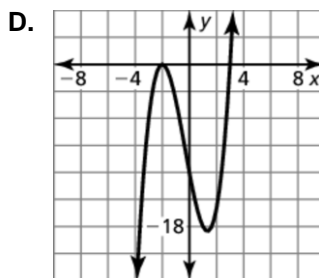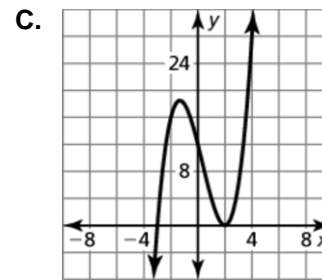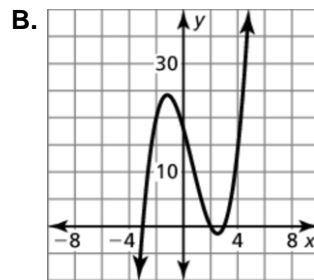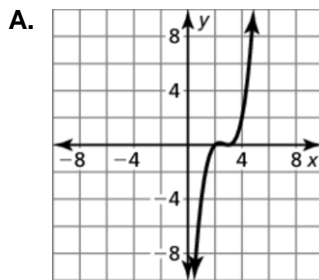**12.** $f(x) = (x - 2)(x - 3)(x + 3)$

13. $f(x) = (x - 3)^2(x - 2)$

14. $f(x) = (x + 2)(x + 3)(x - 3)$

15. $f(x) = (x + 2)^2(x - 3)$

16. $f(x) = (x + 3)^2(x - 2)$

17. $f(x) = (x - 2)^2(x + 3)$

A.

B.

C.

D.

E.

F.