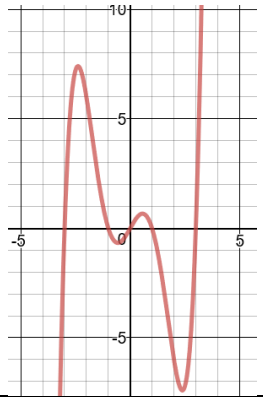
Writing Equations and Graphing Polynomials Name _____ Period _____

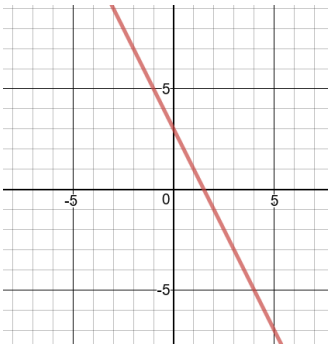
Match each function with its graph.

1.

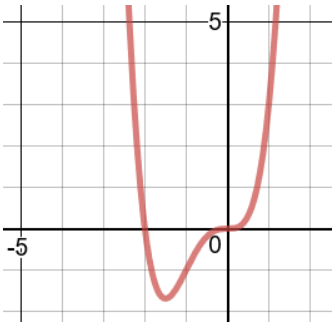
2.



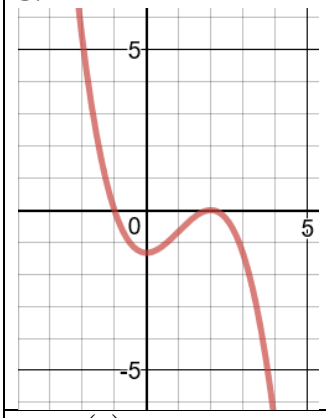
3.



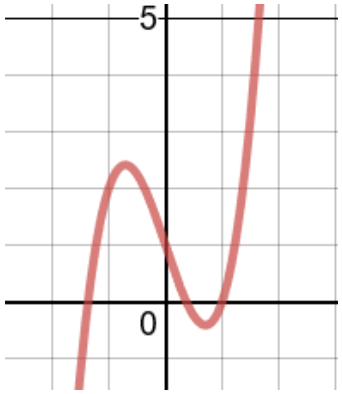
4.



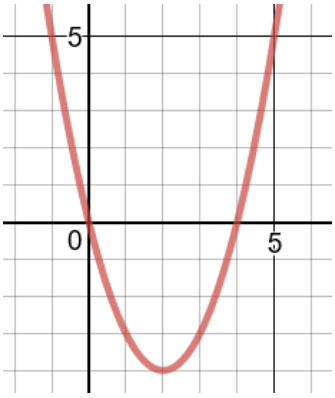
5.



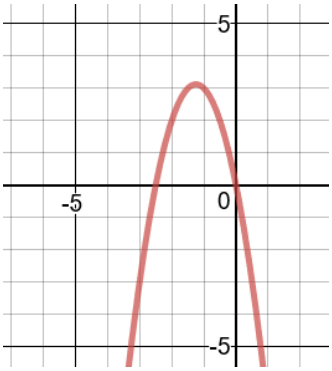
6.



7.



8.



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

B. $f(x) = x^2 - 4x$

C. $f(x) = -2x^2 - 5x$

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

E. $f(x) = -\frac{1}{4}x^4 + 3x^2$

F. $f(x) = -\frac{1}{3}x^3 + x^2 - \frac{4}{3}$

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

H. $f(x) = \frac{1}{5}x^5 - 2x^3 + \frac{9}{5}x$

Write a polynomial in factored form that has the given zeros and degree if stated.

9. $x = 2,\ 6,\ 6$

10. $x = -2,\ -1,\ 0,\ 1,\ 2$

11. $x = -2,\ 4,\ 7$

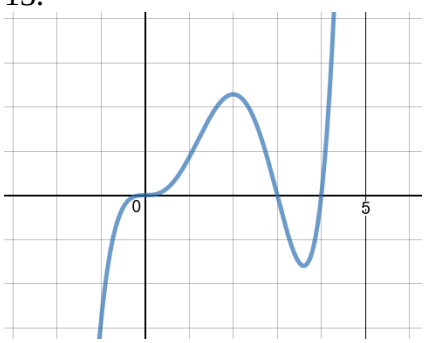
deg *ree* 4

12. $x = -5,\ 1,\ 2$

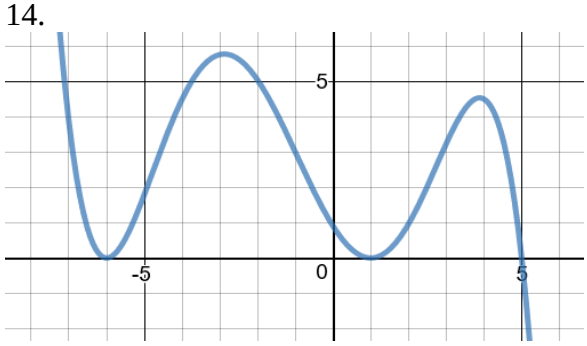
deg *ree* 5

Write an equation of each graph in factored form. State the degree and sign of the LCE.

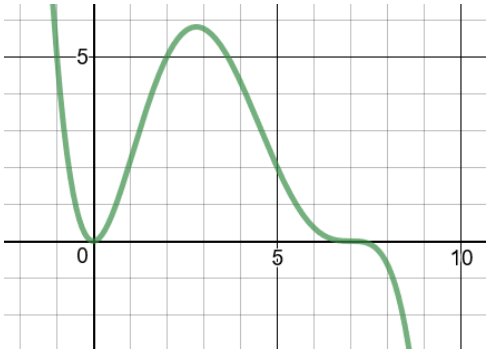
13.



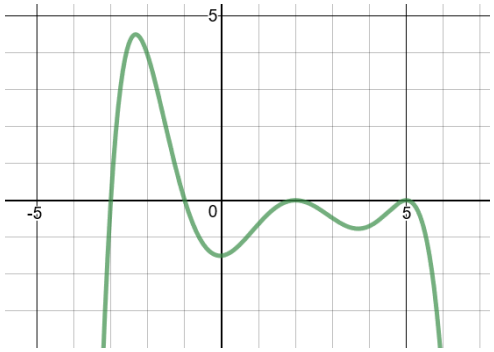
14.



15.



16.



State the degree and end behavior of each polynomial, find the zeros and multiplicities, then sketch the graph.

17. $f(x)=x^3-8x^2+16x$

18. $f(x)=x^3+3x^2-4x-12$

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

20. $f(x)=-\frac{1}{4}(x-2)^2(x+2)^2$

21. $f(x)=-48x^2+3x^4$

22. $f(x)=x(x^2-3)(x^2-9)$