Practice Problem 1

Write the factored form of a polynomial function that crosses the *x*-axis at $x = -5$, crosses the *x*-axis and changes concavity at $x = -1$, and is tangent to the *x*-axis at $x = 2$.

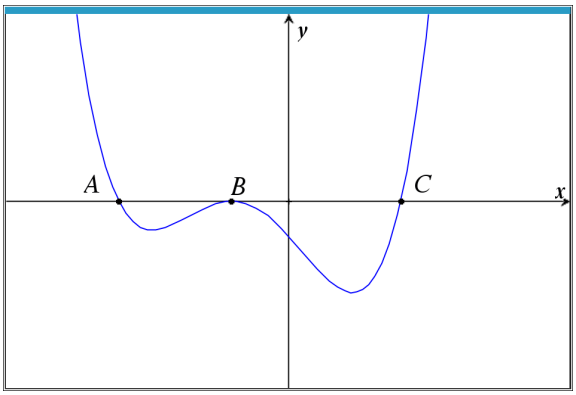
A. $f(x) = (x + 5)(x + 1)^3(x - 2)$

B. $f(x) = (x + 5)(x + 1)^3(x - 2)^2$

C. $f(x) = (x + 5)^3(x + 1)(x - 2)^2$

D. $f(x) = (x + 5)(x + 1)(x - 2)^2$

Practice Problem 2



The figures shows the graph of a quartic polynomial with zeros at *A, B,* and *C*. Which of the following statements is correct.

A. The multiplicity of the zero at *C* is 2 because there is only one positive zero.

B. The multiplicity of the zero at *A* is 2 because there are more zeros to the left of the origin than to the right of the origin.

C. The multiplicity of the zero at *B* is 2 because the function is tangent to the *x*-axis.

D. There are three distinct real zeros and one non-real zero since the polynomial is quartic.

Solutions:

Practice Problem 1: B

Practice Problem 2: C

***Note: This activity has been developed independently by Texas Instruments.* AP is a registered trademark of the College Board, which was not involved in the production of, and does not endorse, this product. Policies subject to change. Visit www.collegeboard.org.