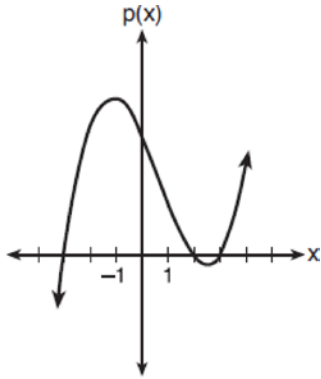


A.APR.B.3: Zeros of Polynomials 2

- 1 The graph of the function $p(x)$ is sketched below.



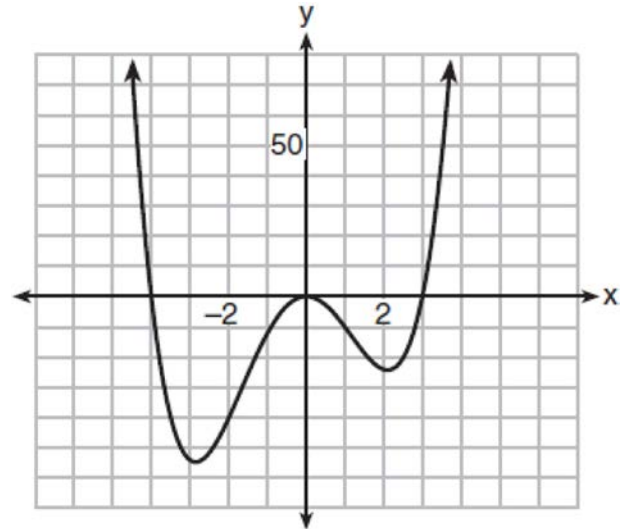
Which equation could represent $p(x)$?

- 1) $p(x) = (x^2 - 9)(x - 2)$
 - 2) $p(x) = x^3 - 2x^2 + 9x + 18$
 - 3) $p(x) = (x^2 + 9)(x - 2)$
 - 4) $p(x) = x^3 + 2x^2 - 9x - 18$
- 2 What are the zeros of $P(m) = (m^2 - 4)(m^2 + 1)$?
- 1) 2 and -2 , only
 - 2) 2, -2 , and -4
 - 3) -4 , i , and $-i$
 - 4) 2, -2 , i , and $-i$
- 3 The zeros for $f(x) = x^4 - 4x^3 - 9x^2 + 36x$ are
- 1) $\{0, \pm 3, 4\}$
 - 2) $\{0, 3, 4\}$
 - 3) $\{0, \pm 3, -4\}$
 - 4) $\{0, 3, -4\}$

- 4 Form an equation whose roots are 2 and $-\frac{4}{3}$.

- 5 Form the equation whose roots are $\frac{1}{2}$ and $-\frac{1}{3}$.

- 6 The graph of $y = f(x)$ is shown below. The function has a leading coefficient of 1.

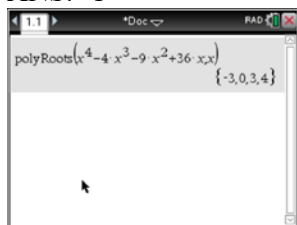


Write an equation for $f(x)$. The function g is formed by translating function f left 2 units. Write an equation for $g(x)$.

A.APR.B.3: Zeros of Polynomials 2

Answer Section

- 1 ANS: 1 REF: 061701aii
 2 ANS: 4 REF: 081708aii
 3 ANS: 1



$$x^4 - 4x^3 - 9x^2 + 36x = 0$$

$$x^3(x - 4) - 9x(x - 4) = 0$$

$$(x^3 - 9x)(x - 4) = 0$$

$$x(x^2 - 9)(x - 4) = 0$$

$$x(x + 3)(x - 3)(x - 4) = 0$$

$$x = 0, \pm 3, 4$$

REF: 061606aii

- 4 ANS:
 $3x^2 - 2x - 8 = 0$

REF: 039112al

- 5 ANS:
 $6x^2 - x - 1 = 0$

REF: 019311al

- 6 ANS:
 $f(x) = x^2(x + 4)(x - 3)$; $g(x) = (x + 2)^2(x + 6)(x - 1)$

REF: 011836aii