

Factors and Zeros

Find all zeros.

1) $f(x) = (2x - 1)(x - 5)$

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

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

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

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

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

7) $f(x) = x(2x - 1)(x - 1)(x + 1)$

8) $f(x) = (2x + 5)(x^2 - 2x - 5)$

Write a polynomial function of least degree with integral coefficients that has the given zeros.

9) 3, 2, -2

10) 3, 1, -2, -4

11) $5, -1, 2i$

12) $-3, -\frac{1}{3}, 5$

13) $\frac{5}{3}, 1, -1$

14) $2, \frac{5}{3}, -5i$

Find all zeros by factoring each function.

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

16) $f(x) = x^3 + 8$