

For each of the following functions: a) find the discriminant, b) describe the number and type of zeros, and c) find the zeros.

1) $f(x) = 2x^2 + 4x + 7$

2) $f(x) = x^2 + 6x + 9$

3) $f(x) = 4x^2 - 9x + 6$

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

Find the standard form of a polynomial function with the given zeros:

5) -7 and 6

6) $3i$ and $-3i$

7) $(-4 + i), (-4 - i)$

8) $(3 + 5i), (3 - 5i)$

9) $(1 + i\sqrt{3}), (1 - i\sqrt{3})$

10) $5i, -5i, -2i, 2i$, and 3

11) If $f(x) = x^2 - 8x + 12$, calculate the values below.

a. $f(-4)$

b. $f(i)$

c. $f(-2 + i)$