

## Unit 8.6 Given Zeros Find Polynomial PRACTICE

**Find the factors of the polynomial. Find the polynomial equation.**

1) Zeros:  $\left\{\frac{\sqrt{5}}{5}, -\frac{\sqrt{5}}{5}, \sqrt{2}, -\sqrt{2}, i\sqrt{2}, -i\sqrt{2}\right\}$

Factors:

Polynomial:  
Equation

2) Zeros:  $\left\{1, -1, \frac{i\sqrt{2}}{2}, -\frac{i\sqrt{2}}{2}\right\}$

Factors:

Polynomial:  
Equation

3) Zeros:  $\left\{5, \sqrt{7}, -\sqrt{7}, \frac{\sqrt{5}}{5}, -\frac{\sqrt{5}}{5}\right\}$

Factors:

Polynomial:  
Equation

4) Zeros:  $\left\{i, -i, \frac{\sqrt{14}}{2}, -\frac{\sqrt{14}}{2}\right\}$

Factors:

Polynomial:  
Equation

5) Zeros:  $\left\{\frac{1}{2}, -\frac{1}{2}, \frac{-1+i\sqrt{3}}{4}, \frac{-1-i\sqrt{3}}{4}, \frac{1+i\sqrt{3}}{4}, \frac{1-i\sqrt{3}}{4}\right\}$

Factors:

Polynomial:  
Equation

6) Zeros:  $\left\{2\sqrt{2}, -2\sqrt{2}, \frac{\sqrt{10}}{5}, -\frac{\sqrt{10}}{5}\right\}$

Factors:

Polynomial:  
Equation

7) Zeros:  $\left\{\frac{i\sqrt{10}}{5}, -\frac{i\sqrt{10}}{5}, 2i, -2i\right\}$

Factors:

Polynomial:  
Equation

8) Zeros:  $\left\{\frac{2\sqrt{10}}{5}, \frac{-2\sqrt{10}}{5}, i\sqrt{2}, -i\sqrt{2}\right\}$

Factors:

Polynomial:  
Equation

9) Zeros:  $\left\{2, -2, \frac{i\sqrt{6}}{3}, -\frac{i\sqrt{6}}{3}\right\}$

Factors:

Polynomial:  
Equation

10) Zeros:  $\left\{1, \frac{i}{2}, -\frac{i}{2}, -3\right\}$

Factors:

Polynomial:  
Equation

11) Zeros:  $\{2, -1 + i\sqrt{3}, -1 - i\sqrt{3}, -2 \text{ mult. } 2, 1 + i\sqrt{3}, 1 - i\sqrt{3}\}$

Factors:

Polynomial:  
Equation

12) Zeros:  $\left\{\frac{1}{2} \text{ mult. } 2, \frac{-1+i\sqrt{3}}{4}, \frac{-1-i\sqrt{3}}{4}, -\frac{1}{2}, \frac{1+i\sqrt{3}}{4}, \frac{1-i\sqrt{3}}{4}\right\}$

Factors:

Polynomial:  
Equation

13) Zeros:  $\left\{\frac{i\sqrt{6}}{3}, -\frac{i\sqrt{6}}{3}, 3, -3 \text{ mult. } 2\right\}$

Factors:

Polynomial:  
Equation

14) Zeros:  $\left\{\sqrt{3}, -\sqrt{3}, \frac{\sqrt{5}}{5}, -\frac{\sqrt{5}}{5}, -\frac{1}{2}\right\}$

Factors:

Polynomial:  
Equation