

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Factors and Zeros

Student Worksheet

1. Factored polynomial to exact zeros

1. Find every zero.

$$(x - 1)(5x - 4)$$

2. Find every zero.

$$(x)(x^2 + 50)$$

3. Find every zero.

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

4. Find every zero.

$$(x - 1)(x^2 + 2)(x^2 + 2)$$

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2. Exact zeros to an integer polynomial

5. Use these zeros and multiplicities to write the polynomial.

$$-\frac{1}{3}, -2, -3, 1, 2, \frac{4}{5}$$

6. Use these zeros and multiplicities to write the polynomial.

$$-\frac{4}{5}\sqrt{2}i, \frac{4}{5}\sqrt{2}i$$

7. Use these zeros and multiplicities to write the polynomial.

$$-1, -\frac{2}{3}, 1$$

8. Use these zeros and multiplicities to write the polynomial.

$$-\frac{1}{7}\sqrt{3}i \text{ (mult. 2)}, \frac{1}{7}\sqrt{3}i \text{ (mult. 2)}$$

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3. Expanded polynomial to factors and zeros

9. Factor completely, then find every zero.

$$30x^5 + 41x^4 - 92x^3 - 53x^2 + 98x - 24$$

10. Factor completely, then find every zero.

$$12x^6 + 52x^5 + 277x^4 + 987x^3 + 975x^2 + 225x$$

11. Factor completely, then find every zero.

$$6x^2 + x - 1$$

12. Factor completely, then find every zero.

$$x^3 + 3x^2 + x + 3$$
