

Math 3
Finding Roots Given at Least One

Name _____

Find all the roots of each function using the given roots.

Function	Given Root(s)
1. $f(x) = x^3 - 11x^2 + 40x - 50$	5
2. $f(x) = x^3 + 2x^2 - x - 2$	1
3. $f(x) = x^4 + 3x^3 - 21x^2 - 43x + 60$	-5, 4
4. $f(x) = x^3 + 8x^2 - 7x - 56$	-8
5. $f(x) = x^3 - 3x^2 + 9x + 13$	-1
6. $f(x) = x^3 + 3x^2 - 20x + 6$	3
7. $f(x) = x^4 + x^3 - 11x^2 - 9x + 18$	1, -3
8. $f(x) = x^3 - 10x^2 + 34x - 40$	4
9. $f(x) = x^3 + 5x^2 - 3x - 15$	-5
10. $f(x) = x^4 + 7x^3 + 13x^2 - 23x - 78$	-3, 2
11. $f(x) = x^4 - 9x^2 + 8$	1, -1
12. $f(x) = 2x^4 - 9x^3 + 2x^2 + 21x - 10$	$\frac{1}{2}$, 2

Finding Roots Given at Least One – answers

1. $5, 3 \pm i$

2. $1, -2, -1$

3. $-5, 4, 1, -3$

4. $-8, \pm\sqrt{7}$

5. $-1, 2 \pm 3i$

6. $3, -3 \pm \sqrt{11}$

7. $1, -3, 3, -2$

8. $4, 3 \pm i$

9. $-5, \pm\sqrt{3}$

10. $-3, 2, -3 \pm 2i$

11. $\pm 1, \pm 2\sqrt{2}$

12. $\frac{1}{2}, 2, 1 \pm \sqrt{6}$