

Name:

Period:

Date:

Practice Worksheet: Solving Polynomials

Solve each polynomial using the given factor. Show all work. Start with synthetic division, then factor!

1] $y = x^3 - 18x^2 + 95x - 126; (x - 9)$

$x = 2, 7, 9$

2] $y = x^3 - x^2 - 21x + 45; (x + 5)$

$x = -5, 3, 3$

3] $y = 4x^3 - 4x^2 - 9x + 9; (x - 1)$

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

4] ~~$y = x^4 - 2x^3 - 3x^2 + 12x - 18; (x^2 - 6)$~~

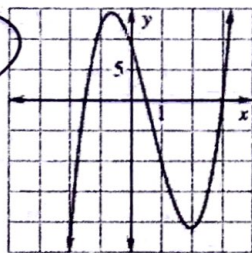
$y = x^3 - 2x^2 - 9x + 18; (x - 2)$

$x = 2, 3, -3$

Solve each polynomial using the graph. Show all work. Use the root from the graph to do synthetic then factor!

5] $y = 4x^3 - 8x^2 - 15x + 9$

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



6] $y = x^3 + x^2 - 14x - 24$

$x = -2, -3, 4$

