Student: _____ **Date:** _____ **Time:** _____	**Instructor:** Fred Khoury **Course:** Math 2312-1000 Precalculus (Fall - 2015) **Book:** Lial: College Algebra and Trigonometry, 4e	**Assignment:** Quiz Sec 1.3

1. Use synthetic division to perform the division.

$$\frac{-2x^3-3x^2+26x+24}{x+4}$$

A. $-2x+5$

B. $2x^2-4x+6$

C. $-\frac{1}{2}x^2-\frac{3}{4}x+\frac{13}{2}$

D. $-2x^2+5x+6$

2. Use synthetic division to perform the division.

$$\frac{x^5+9x^4+16x^3-10x^2+9x-15}{x+6}$$

A. $x^4+3x^3-2x^2+2x-3+\frac{3}{x+6}$

B. $x^4+3x^3-2x^2+2x+3+\frac{5}{x+6}$

C. $x^4+3x^3-2x^2+2x+3$

D. $x^3+3x^2-2x+2+\frac{3}{x+6}$

3. Use synthetic division to perform the division.

$$\frac{x^5-1}{x-1}$$

A. $x^5+x^4+x^3+x^2+x+1$

B. $x^5+x^4+x^3+x^2+x+\frac{1}{x-1}$

C. $x^4+x^3+x^2+x+\frac{1}{x-1}$

D. $x^4+x^3+x^2+x+1$

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4. Use synthetic division to perform the division.

$$\frac{x^4 + 1296}{x - 6}$$

A. $x^3 - 6x^2 + 36x - 216 + \frac{2592}{x - 6}$

B. $x^3 + 6x^2 + 36x + 216 + \frac{1296}{x - 6}$

C. $x^3 + 6x^2 + 36x + 216 + \frac{2592}{x - 6}$

D. $x^3 + 6x^2 + 36x + 216$

5. Give all possible rational zeros for the following polynomial.

$P(x) = 3x^3 + 52x^2 + 52x + 27$

A. $\pm 1, \pm 3, \pm 6, \pm 9, \pm 27$

B. $\pm 1, \pm \frac{1}{3}, \pm \frac{1}{9}, \pm \frac{1}{27}, \pm 3$

C. $\pm 1, \pm \frac{1}{3}, \pm 3, \pm 9, \pm 27$

D. $\pm 1, \pm 3, \pm 9, \pm 27$

6. Give all possible rational zeros for the following polynomial.

$P(x) = -2x^4 + 4x^3 + 6x^2 + 18$

A. $\pm 1, \pm \frac{1}{2}, \pm 2, \pm 3, \pm 6, \pm 9, \pm 18$

B. $\pm 1, \pm 2, \pm \frac{1}{2}, \pm \frac{1}{3}, \pm \frac{1}{6}, \pm \frac{1}{9}, \pm \frac{1}{18}$

C. $\pm 1, \pm \frac{1}{2}, \pm 2, \pm 3, \pm \frac{3}{2}, \pm 6, \pm 9, \pm \frac{9}{2}, \pm 18$

D. $\pm 1, \pm 2, \pm 3, \pm 6, \pm 9, \pm 18$

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7. Give all possible rational zeros for the following polynomial.

$P(x) = 2x^3 - 5x^2 + 7x - 23$

A. $\pm 1, \pm 2, \pm 23, \pm \frac{23}{2}$

B. $\pm 1, \pm \frac{1}{23}, \pm 2, \pm \frac{2}{23}$

C. $\pm 1, \pm 23, \pm \frac{1}{2}, \pm \frac{23}{2}$

D. $\pm 1, \pm 2, \pm 23$

8. Find all rational zeros and factor f(x).

$f(x) = x^3 + 5x^2 - 52x - 224$

A. $-5, -8, 14; f(x) = (x + 5)(x + 8)(x - 14)$

B. $4, 8, -7; f(x) = (x - 4)(x - 8)(x + 7)$

C. $-4, -8, 7; f(x) = (x + 4)(x + 8)(x - 7)$

D. $5, 8, -14; f(x) = (x - 5)(x - 8)(x + 14)$

9. Find all rational zeros and factor f(x).

$f(x) = 10x^3 + 53x^2 + 14x - 5$

A. $-2, 5, -5; f(x) = (x + 2)(x - 5)(x + 5)$

B. $-\frac{1}{2}, \frac{1}{5}, -5; f(x) = (2x + 1)(5x - 1)(x + 5)$

C. $-2, 5, -5; f(x) = (2x + 1)(5x - 1)(x + 5)$

D. $-\frac{1}{10}, 1, -5; f(x) = (10x + 1)(x - 1)(x + 5)$

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10. Find all complex zeros of the polynomial function. Give exact values. List multiple zeros as necessary.

$f(x) = x^3 - 2x^2 - 11x + 52$

A. $-4, 3 + 4i, 3 - 4i$

B. $-4, 3 + 2i, 3 - 2i$

C. $-4, 1 + 2i\sqrt{13}, 1 - 2i\sqrt{13}$

D. $-4, 1 + 2i, 1 - 2i$

11. Find all complex zeros of the polynomial function. Give exact values. List multiple zeros as necessary.

$f(x) = x^4 - 36$

A. $-\sqrt{6}, \sqrt{6}$

B. $-\sqrt{6}, \sqrt{6}, -i\sqrt{6}, i\sqrt{6}$

C. $-\sqrt{6}, \sqrt{6}, -6i, 6i$

D. $\sqrt{6}, i\sqrt{6}$