**Show All Work No Calcs! My Name is \_\_\_­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Pre-Calculus Practice and I love Thanksgiving! Period \_\_\_\_**

**PRACTICE TEST CHAPTER 2**

**Concept 14: Graphing Quadratics**

1

1

Graph problems 1 & 2

1) 

1. Quick Info: circle one

y-int vertex x-int

1. axis of symmetry \_\_\_\_\_\_\_\_
2. Vertex \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) 

1

1

1. Quick Info: circle one

y-int vertex x-int

1. axis of symmetry \_\_\_\_\_\_\_\_
2. Vertex \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Concept 15: Writing Equations of Quadratics**

|  |
| --- |
| 3) |
| 4) |

3) Write the equation of a quadratic in **factored form** that has *x*-intercepts of 7 and 4 through the point (1,6).

4) Write the equation of a quadratic in **vertex form** that has a vertex of (-1, 3) and goes through the point (-5,-7).

**Concept 16: Graphing Polynomials**

Be sure to follow all directions and show all of your steps.

Find each of the following for the polynomial.

5) 

1. Find the x-intercepts. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Find the y-intercepts. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Graph *f*.

6) 

1. Find the x-intercepts. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Find the y-intercepts. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Graph *f*.

|  |
| --- |
| 7) |
| 8) |

**Concept 17: Writing Equations of Polynomials**

For problems 7 & 8, find a polynomial  in **FACTORED FORM** with leading coefficient 1 and having the given degree and zeros.

7) Degree 3; zeros -3, -2, 1

8) Degree 4; zeros -4, -3, 0, 2

**Concept 18: Division of Polynomials**

Divide

|  |
| --- |
| 9) |
| 10) |
| 11) |
| 12) |

9) 

10) 

**Concept 19: Complex Numbers**

Simplify

11) 

12) 

|  |
| --- |
| 13)Possible rational zeros  Factored Form |
| 14)Possible rational zeros  Factored Form |
| 15) |
| 16) |

**Concept 20: Finding Zeros of Polynomials**

List all possible rational zeros of , and find all zeros of , and factor  into linear and quadratic factors.

13) 

14) 

**Concept 21: Finding Polynomials with Real and Complex Zeros**

15) If a 4th degree polynomial has  and  as two zeros with a solution of , find the polynomial as a product of linear and irreducible quadratic factors over all real numbers.

16) If a 3rd degree polynomial has  and  as two zeros with a solution of , find the polynomial as a product of linear and irreducible quadratic factors over all real numbers.

|  |
| --- |
| 17)*y*-intercept:  *x*-intercept:  V.A.:  Hole:  H.A.: |
| 18)  H.A.: |
| 19) |
| 20) |

**Concept 22: Rational Functions**

17) Identify any Vertical Asymptotes, Horizontal Asymptotes, Intercepts and Holes for



18) Find an equation of a rational function *f* that satisfies the given conditions and find the Horizontal Asymptote:

*x*-intercept: 

Vertical Asymptotes: 

Hole: 

*y*-intercept: 

**Concept 23: Solving Inequalities**

Solve

19) 

20) 