**Unit 6 Homework**

**6.1.1(1-2) HW #1**

Find the length of and the coordinates of the midpoint of .

1) 2)

**6.1.1(3) HW #2**

Classify each polynomial function as linear, quadratic, cubic, quartic, or quintic. Also, give its leading term, leading coefficient, and degree.

1) 2)

3) 4)

**6.1.1(4) HW #3**

Graph each equation. Label the origin and the x- and y-intercepts as L, M, and N, respectively. Find the area of .

1) 2)

**6.1.2 HW #4**

Use the given values to find an equation of the form .

1) 2)

3) 4)

**Method of Undetermined Coefficients HW #5**

Find the slope of the line joining the points whose coordinates are given.

1) (4, 2), (9, 5) 2) (0, 4), (12, 0) 3) (-4, -2), (2, -6)

4) (-2, 6), (2, -2) 5) (8, 5), (-7, 5) 6) (-3, 8), (-3, -2)

**6.1.3(1-2) HW #6**

Find the slope and y-intercept of the line whose equation is given.

1) 2) 3)

4) 5) 6)

**6.1.3(3) HW #7**

Solve by using the quadratic formula. Give your answers in simplest radical form. Give both real and imaginary roots.

1) 2)

**6.1.3(4) HW #8**

1) The leading coefficient of a cubic polynomial P is 2, and the coefficient of the linear term is -5. If P(0) = 7 and P(2) = 21, find P(3).

**6.1.3(5) HW #9**

Sketch each parabola. Label the vertex, axis of symmetry, and the x- and y-intercepts.

1) 2) 3)

4) 5) 6)

**6.2.2(1-3) HW #10**

Find an equation of the quadratic function described.

1) Its graph is a parabola with x-intercepts 2 and -1, and y-intercept 6.

2) The function f has zeros 5 and 1 and f(0) = 1.

3) Its graph is a parabola with vertex (4, 8) and passing through the origin.

**6.2.2(4) HW #11**

Find an equation of the quadratic function described.

1) The minimum value of h is h(3) = -5, and h(1) = 2.

2) The maximum value of g is g(-1) = 6, and g(-3) = 4.

**6.2.2(5) HW #12**

Find the remainder when is divided by:

1) 2) 3) 4)

Find the remainder when is divided by:

1) 2) 3) 4)

**6.2.2(6) HW #13**

Find the quotient and remainder when dividing the following:

1) by 2) by

3) by 4) by

**6.2.2(7) HW #14**

Given a polynomial equation and one or more roots, find the remaining roots.

1) ; root: 2) ; root:

**6.2.3(5) HW #15**

1) Which of the following are factors of

a. b. c.

2) Which of the following are factors of

a. b. c.

**6.2.3(6-7) HW #16**

Solve by using the quadratic formula. Give answers in simplest radical form.

1. 2) 3) 4)

**6.2.3(8) HW #17**

Simplify.

1. 2) 3)
2. 5) 6)

**Complex Number TWIZ HW #18**

Simplify.

1. 2) 3)
2. 5) 6)

**6.3.2(2) HW #19**

Given the polynomial and roots provided, find the remaining roots.

1. ; roots:
2. ; roots:

**6.3.2(3-4) HW #20**

For each of the following, give the x-intercepts and the equation for vertical or horizontal asymptotes (if any).

1. 2)

**6.3.2(5-6) HW #21**

For each of the following, give the x-intercepts and the equation for vertical or horizontal asymptotes (if any).

1. 2)

**Unit 6 Review HW #22**

Sketch the graph of the following function. Show vertical/horizontal asymptotes and x-intercepts.