

Algebra 2  
Chapter 5 Review Sheet

Graph:

1.  $y = x^2 - 2x + 3$

2.  $y = x^2 - 4x + 4$

3.  $y = x^2 + 6x + 5$

Determine whether the given quadratic function has a maximum or a minimum value, then find the value:

4.  $f(x) = -4x + x^2 + 7$

5.  $f(x) = -2x - x^2 + 4$

Find the real roots of the equation by graphing:

6.  $y = 2x^2 - 2x - 4$

7.  $y = 2x^2 - 12x + 18$

8.  $y = 4x^2 - 2x + 3$

Estimate the solutions to 3 decimal places.

9. Find the consecutive integers between which the roots of the given equation are located:  $4x^2 - 4x - 19 = 0$

Solve by factoring:

10.  $4x^2 - 17x = 15$

11.  $4x^2 - 11x = 3$

Simplify:

12.  $\sqrt{-192}$

13.  $(-4 - 7i) - (-8 - 6i)$

14. Multiply:  $(-3 + 7i)(8 - 7i)$

15. Divide:  $\frac{2 - 8i}{-4 - 2i}$

Solve by completing the square:

16.  $x^2 - 4x - 1 = 0$

17.  $x^2 - 10x - 2 = 0$

18. Solve:  $x^2 + 2x + 10 = 0$

Solve by using the quadratic formula:

19.  $3x^2 - 4x - 2 = 0$

20.  $3x^2 + 4x - 5 = 0$

Find the discriminant and determine the number and kind of roots:

21.  $3x^2 - 6x + 3 = 0$

22.  $2x^2 - 4x - 16 = 0$

23.  $2x^2 - 2x = 3$

Find a quadratic equation with the given roots:

24.  $-\frac{1}{3}$  and  $\frac{2}{3}$

25.  $2 \pm \sqrt{3}$

26.  $3 \pm 2i$

Find the equation of the axis of symmetry:

27.  $y = 3\left(x + \frac{2}{3}\right)^2 + \frac{25}{3}$

28.  $y = 2(x - 4)^2 - 1$

Find the coordinates of the vertex:

29.  $y = (x + 2)^2 - 10$

30.  $y = 2(x - 2)^2 - 12$

Find the equation for the parabola with the given vertex that passes through the given point:

31. vertex:  $(-7, 3)$   
point:  $(-9, 23)$

32. vertex:  $(2, 6)$   
point:  $(0, -10)$

Write the equation in the form  $y = a(x - h)^2 + k$  and graph:

33.  $y = 3x^2 - 6x - 2$

34.  $y = 3x^2 - 12x + 7$

35.  $y = 2x^2 + 8x + 3$

Graph:

36.  $y > -x^2 + 4x - 3$

37.  $y > x^2 - 4x + 3$

Solve:

38.  $x^2 + 2x - 24 > 0$

39.  $x^2 + 5x - 36 < 0$