

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

Find a quadratic equation with the given roots:

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

13. $2 \pm \sqrt{3}$

Solve by using the quadratic formula:

14. $3x^2 - 4x - 2 = 0$

15. $3x^2 + 4x - 5 = 0$

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

16. $3x^2 - 6x + 3 = 0$

17. $2x^2 - 4x - 16 = 0$

18. $2x^2 - 2x = 3$

Find the equation of the axis of symmetry:

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

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

Find the coordinates of the vertex:

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

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

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

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

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

Write the equation in the form

$y = a(x - h)^2 + k$ and graph:

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

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

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

Graph:

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

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

Solve:

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

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