Algebra 2                                        Name_____

## Chapter 3 Test Review 2020

**Solve each equation by taking square roots.**

1) $7n^2 + 8 = 575$

2) $100n^2 - 4 = 45$

3) $7r^2 - 8 = -34$

4) $16x^2 + 5 = 105$

**Solve each equation by factoring.**

5) $k^2 - 15k = -56$

6) $n^2 = 12 - 4n$

7) $r^2 + 6 = 5r$

8) $x^2 - 4x = 0$

9) $x^2 + 4x - 8 = -3x$

10) $x^2 + 13x + 24 = 3x$

11) $-5a^2 + 4a = -6a^2 - 3$

12) $a^2 - 5a = 6$

13) $5a^2 = -60 - 35a$

14) $6m^2 + 108 = -54m$

**Solve each equation by completing the square.**

15) $p^2 - 6p - 79 = 2$

16) $m^2 + 16m - 90 = -10$

17) $b^2 + 16b - 53 = 4$

18) $k^2 + 2k - 35 = 5$

19) $2v^2 - 4v = 6$

20) $2v^2 - 70 = -8v$

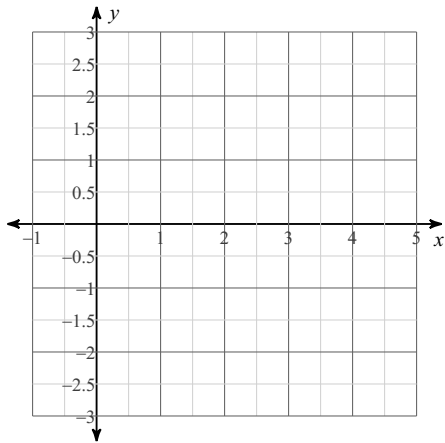**Solve each equation with the quadratic formula.**

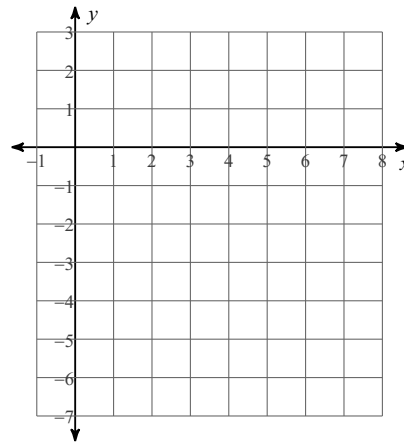21) $x^2 = 72 - x$

22) $12a^2 - 2a = 5$

23) $11n^2 = -12 - 12n$

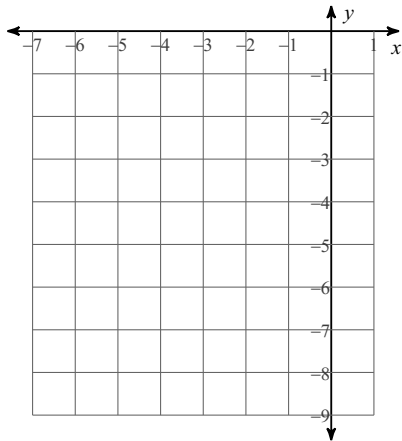24) $8x^2 = 8x + 13$

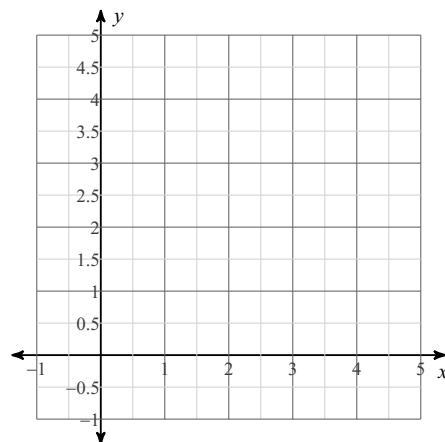**Sketch the graph of each function.**

25) $y \le \dfrac{1}{2}(x-2)^2 - 1$

26) $y \ge -2(x-4)^2 + 2$

27) $y \le -(x+3)^2 - 4$

28) $y > -\dfrac{1}{2}(x-2)^2 + 3$

**Solve each inequality by factoring.**

29) $n^2 - 24 < -2n$

30) $v^2 \ge -8v$

31) $k^2 + 5 > -6k$

32) $b^2 \le -2b + 8$

33) $a^2 < 9$

34) $k^2 + 32 \ge 12k$

**Solve the system of equations by graphing**

35) $y = x + 6$
$y = \dfrac{1}{2}(x - 6)^2$

36) $y = -x + 3$
$y = 3x^2 - 4x + 3$

37) $y = (x + 2)^2 - 3$
$y = -3$

38) $y = 2x^2 - 8x + 5$
$y = 2x - 3$

**Solve each system by using substitution or elimination**

39) $y = x - 4$
$y = x^2 - 4x$

40) $y = 7$
$3x - 6 = 4x^2 - y$

**Simplify.**

41) $8 - (4i) - (-3 - 4i)$

42) $-7 - (-8 + 3i) - 8$

43) $(4 - 7i) + (-4 + 5i)$

44) $(4 - 8i) + (-3 + 4i)$

45) $(-8 + 7i)^2$

46) $(3i)(7i)(3 + 5i)$

47) $(4 + 8i)(5 - 6i)$

48) $(-3 + 3i)(3 - 3i)$