Honors Algebra 2 Name_____

1.6 Solving with Imaginary Solutions

Date_____

Solve each equation with the quadratic formula.

1) $5x^2 + 7x + 8 = 0$

2) $6a^2 - 11a + 11 = 0$

3) $v^2 - 3v + 5 = 0$

4) $2x^2 + 3x + 4 = -5$

5) $11x^2 + 10x + 9 = 3$

6) $12m^2 + 7m + 9 = 7$

Solve each equation by completing the square.

7) $r^2 + 6r - 59 = 0$

8) $v^2 - 6v + 55 = 0$

9) $b^2 - 10b + 70 = 0$

10) $a^2 + 8a + 85 = 0$

11) $x^2 + 10x + 52 = 0$

12) $k^2 + 2k + 45 = 0$

Solve each equation by taking square roots.

13) $6x^2 - 1 = -47$

14) $2n^2 + 2 = -13$

15) $4x^2 + 4 = -44$

16) $4b^2 + 7 = -45$

17) $7n^2 - 5 = -107$

18) $6x^2 - 5 = -104$

19) $-2 - 6b^2 = -9$

20) $9r^2 + 9 = -129$

Answers to 1.6 Solving with Imaginary Solutions

1) $\left\{\frac{-7+i\sqrt{111}}{10}, \frac{-7-i\sqrt{111}}{10}\right\}$

2) $\left\{\frac{11+i\sqrt{143}}{12}, \frac{11-i\sqrt{143}}{12}\right\}$

3) $\left\{\frac{3+i\sqrt{11}}{2}, \frac{3-i\sqrt{11}}{2}\right\}$

4) $\left\{\frac{-3+3i\sqrt{7}}{4}, \frac{-3-3i\sqrt{7}}{4}\right\}$

5) $\left\{\frac{-5+i\sqrt{41}}{11}, \frac{-5-i\sqrt{41}}{11}\right\}$

6) $\left\{\frac{-7+i\sqrt{47}}{24}, \frac{-7-i\sqrt{47}}{24}\right\}$

7) $\left\{-3+2\sqrt{17}, -3-2\sqrt{17}\right\}$

8) $\left\{3+i\sqrt{46}, 3-i\sqrt{46}\right\}$

9) $\left\{5+3i\sqrt{5}, 5-3i\sqrt{5}\right\}$

10) $\left\{-4+i\sqrt{69}, -4-i\sqrt{69}\right\}$

11) $\left\{-5+3i\sqrt{3}, -5-3i\sqrt{3}\right\}$

12) $\left\{-1+2i\sqrt{11}, -1-2i\sqrt{11}\right\}$

13) $\left\{\frac{i\sqrt{69}}{3}, -\frac{i\sqrt{69}}{3}\right\}$

14) $\left\{\frac{i\sqrt{30}}{2}, -\frac{i\sqrt{30}}{2}\right\}$

15) $\left\{2i\sqrt{3}, -2i\sqrt{3}\right\}$

16) $\left\{i\sqrt{13}, -i\sqrt{13}\right\}$

17) $\left\{\frac{i\sqrt{714}}{7}, -\frac{i\sqrt{714}}{7}\right\}$

18) $\left\{\frac{i\sqrt{66}}{2}, -\frac{i\sqrt{66}}{2}\right\}$

19) $\left\{\frac{\sqrt{42}}{6}, -\frac{\sqrt{42}}{6}\right\}$

20) $\left\{\frac{i\sqrt{138}}{3}, -\frac{i\sqrt{138}}{3}\right\}$