**Algebra 2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**4.3-4.6 Review**

**Solve each equation by factoring.**

|  |  |  |
| --- | --- | --- |
| **1.**  | **2.**  | **3.**  |
| **4.**  | **5.**  | **6.**  |
| **7.**  | **8.**  | **9.**  |
| **10.**  | **11.**  | **12.**  |

**Simplify.**

|  |  |  |
| --- | --- | --- |
| **13.**  | **14.**  | **15.**  |
| **16.**  | **17.**  | **18.**  |
| **19.**  | **20.**  | **21.**  |
| **22.**  | **23.**  | **24.**  |

**Solve each equation by using the Quadratic Formula.** 

|  |  |  |
| --- | --- | --- |
| **25.**  | **26.**  | **27.**  |

**Find the discriminant to describe the number and type of roots.**

|  |  |  |
| --- | --- | --- |
| **28.**  | **29.**  | **30.**  |

**Solve each equation.**

|  |  |  |
| --- | --- | --- |
| **31.**  | **32.**  | **33.**  |

**Solve each equation by using the Square Root Property**

|  |  |  |
| --- | --- | --- |
| **34.** $x^{2}-8x+16=1$ | $$35. x^{2}-6x+9=7$$ | **36.** $x^{2}+16+64=15$ |

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

|  |  |  |
| --- | --- | --- |
| **37.** $x^{2}-4x+12=0$ | $$38. x^{2}+6x-6=0$$ | **39.** $x^{2}-8x-13=0$ |

**40. The length of a rectangle is 2 feet more than its width. Find the dimensions of the rectangle if its area is 63 square feet.**

**41. Find two consecutive even positive integers whose product is 624.**

**42. An object is propelled straight up from the ground with an initial velocity of 60 feet per second. At what times will the object be at a height of 56 feet?**

**43. Bryan dropped a ball from a bridge that is 221 feet tall. How many seconds will it take for the ball to hit the water?**

**Key:**

|  |  |  |
| --- | --- | --- |
| **1. {-9, 2}** | **2. {-11, -3}** | **3. {-6, 5}** |
| **4. {0, 1/3}** | **5. {0, -2/3}** | **6. {0, 2/3}** |
| **7. {7/8, -7/8}** | **8. {3/5, -3/5}** | **9. (9/10, -9/10}** |
| **10. {1/2, -3}** | **11. {3/4, -2}** | **12. {-2/3, 5}** |

|  |  |  |
| --- | --- | --- |
| **13.** $3i\sqrt{5}$ | **14.** $6i\sqrt{2}$ | **15.** $3i\sqrt{11}$ |
| **16. 9 – 15i** | **17. 16 + 5i** | **18. 4 + 14i** |
| **19. 24 – 10i** | **20. 11 + 2i** | **21. 23 – 24i** |
| **22.** $\frac{14+16i}{113}$ | **23.** $\frac{–6+8i}{25}$ | **24.** $\frac{4+7i}{5}$ |

|  |  |  |
| --- | --- | --- |
| **25. {1/2, -2/3}** | **26.** $\left\{7\pm 2i\right\}$ | **27.** $\left\{\frac{1\pm \sqrt{7}}{6}\right\}$ |
| **28. -76; 2 complex** | **29. 97; 2 real. Irrational**  | **30. 0; 1 real, rational**  |
| **31.** $\left\{\pm 2i\right\}$ | **32.** $\left\{\pm i\sqrt{3}\right\}$ | **33.** $\left\{\pm 2i\sqrt{3}\right\}$ |
| **34. {5, 3}** | **35.** $\left\{3\pm \sqrt{7}\right\}$ | **36.** $\left\{-8\pm \sqrt{15}\right\}$ |

|  |  |  |
| --- | --- | --- |
| **37.** $\left\{-2\pm 2i\sqrt{2}\right\}$ | **38.** $\left\{-3\pm \sqrt{15}\right\}$ | **39.** $\left\{4\pm \sqrt{29}\right\}$ |

**40. 7 ft by 9 ft**

**41. 24 and 26**

**42. 4.5 seconds**

**43. 3.72 seconds**