*\*\*\*\*\*Things to remember\*\*\*\*\*\*\**

**PERFECT SQUARES**

**PERFECT CUBES**

**13 =1**

**23 =8**

**33 =27**

**43=64**

**53=125**

**63=216**

**73 =343**

**12 =1 82 =64**

**22 =4 92 =81**

**32 =9 102 =100**

**42 =16 112 =121**

**52 =25 122 =144**

**62 =36 132 =169**

**72 =49 142 =196**

|  |  |
| --- | --- |
| Zero Exponent Property | *a*0 *=* 1, (*a* ≠ 0)  |
| Negative Exponent Property |  |
| Product of Powers Property  |  |
| Quotient of Powers Property | http://hotmath.com/hotmath_help/topics/properties-of-exponents/properties-of-exponents-image022.gif |
| Power of a Product Property  |  |
| Power of a Quotient Property |  |
| Power of a Power Property | (*ab*)*c* = *abc* |
| Rational Exponent Property |  |

Examples:

Product of Powers  Quotient of Powers 

Negative Property  Power of a Power 

Unit 1 Review Problems Algebra II Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Simplify** each expression:

1. $\sqrt{48}$ 2. $\sqrt{75}$ 3. $\sqrt{162}$

4. $2x^{3}⋅3x^{7}$ 5. $\frac{4x^{5}y^{3}}{3x^{2}y}$ 6. $\left(2ab^{2}c^{3}\right)^{3}$

7. $\sqrt{-18}$ 8. $\sqrt{-49}$ 9. $(4i-3)+(2-i)$

10. $\left(3+2i\right)-\left(5-6i\right)$ 11. $2i\left(6-i\right)$ 12.$(2i+3)(3i-5)$

**Factor** each polynomial:

13)  14) $2x^{3}+10x$ 15) 

16) $x^{2}-3x-54$ 11) $x^{2}-8x+12$ 12)

13) $3x^{2}-14x-5$ 14)  15)

**Solve** each quadratic equation by factoring:

16)  17)  18) 4x2 – 15 = -7x

Solve by quadratic formula. Be sure to find the discriminant and identify the # and type of solutions.

19) $2x^{2}-x-6=0$ 20) $x^{2}+13x+7=0$