Worksheet 5.3 A **Adv. Algebra 474** **Name**_____

Solve the equation. Round to the hundredths place.

1. $x^2 = 324$

2. $x^2 - 81 = 0$

3. $5x^2 - 180 = 0$

4. $3x^2 - 100 = 332$

5. $\frac{3}{2}x^2 - 8 = 16$

6. $\frac{1}{2}x^2 + 15 = 5$

7. $x^2 + 1 = 3x^2 - 13$

8. $2(x^2 + 4) = 10$

9. $2(x^2 - 1) = 9$

10. $2(x + 3)^2 = 8$

11. $3(x - 2)^2 + 4 = 52$

12. $(3x + 1)^2 - 36 = 0$

13. $(2x - 3)^2 = 25$

14. $\frac{1}{2}(x - 4)^2 = 8$

15. $\frac{1}{4}(x + 1)^2 - 16 = 0$

16. **Falling Object** Use the falling-object model **$h=-16t^2 + s$** (where t is measured in seconds and h is measured in feet) to find the time required for an object to reach the ground from a height of s = 100 feet and s = 200 feet. Does an object that is dropped from twice as high take twice as long to reach the ground? Prove your answer.