Factor each term.

1. $16n^2 - 9$

2. $4m^2 - 25$

3. $16a^2 - 40a + 25$

4. $4x^2 - 4x + 1$

5. $9x^2 - 1$

6. $k^2 - 25$

7. $49b^2 - 56b + 16$

8. $100x^2 + 180x + 81$

Solve each equation

9. $r^2 - 1 = 0$

10. $200y^2 + 80y + 8 = 0$

You are analyzing the flight of a new model rocket that you assembled. In each equation, $h$ is the height of the rocket in centimeters, and the rocket was fired from the ground at time $t = 0$, where $t$ is measured in seconds.

11. Using the equation $h = -490t^2 + 1120t$, when is the height of the Model A rocket 640 centimeters?

12. You also have a more powerful rocket. For this rocket, you use the equation $h = -490t^2 + 1260t$. When is the height of the Model B rocket 810 centimeters?