**Assignment: Solving Quadratic Equations by Factoring**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_

**Solve. Show Work!**

1. $x^{2}-7x+6=0$ 8. $x^{2}=81$

2. $x^{2}-25=0$ 9. $9x=x^{2}$

3. $2x^{2}-5x+2=0$ 10. $x^{2}+8x=-16$

4. $x^{2}+4x=0$ 11. $4x^{2}=81$

5. $18x+28=-2x^{2}$ 12. $x^{2}+6x=-5$

6. $5x^{2}-25=20x$ 13. $9x^{2}=-6x-1$

7. $13x-4=3x^{2}$ 14. $3x^{2}+x=4$

15. A bicyclist is riding at a speed of 18 mi/h when she starts down a long hill. The distance *d* she travels in feet can be modeled by $d\left(t\right)=4t^{2}+18t$, where *t* is the time in seconds. How long will it take her to reach the bottom of a 400-foot-long hill?

16. The area of a rectangle is 27 in2. The length of the rectangle is 6 inches more than the width. Find the dimensions of the rectangle.

17. The base of a triangle is 4 inches longer than twice its height. If the triangle has an area of 24 in2, what is the height?

18. Members of the science club launch a model rocket from ground level with a starting velocity of 96 ft/s. After how many seconds will the rocket have an altitude of 128 feet? Use the formula $h\left(t\right)=-16t^{2}+v\_{0}t+h\_{0}$

19. The cost of a pizza with “the works” is given as a function of its diameter. The relationship is $C=d^{2}-14d-23$ where  is the cost, in cents, and *d* is the diameter of the pizza, in centimeters. If the pizza costs $12.00, then what is a reasonable estimate for the diameter of the pizza?

F 29 cm G 15 cm H 10 cm J 43.5 cm