1. Solve each of these equations using factoring.

a) $(x-9)(5x+4)=0$ b) $x^2-2x-15=0$ c) $x^2+4x=0$

d) $2x^2=5x$ e) $x^2+4x+4=0$ f) $2x^2=7x+4$

g) $4x^2-25=0$ h) $(x-1)(x+4)=14$ i) $6w^2=48w-9$

2. If you kick a ball up from the ground with a certain speed and angle, its height in feet at time t is $-16t^2+20t$. When will the ball hit the ground? (Set up an equation and solve it using the factoring method. Don't solve this by any other way.)

3. If a football league has N teams, then there must be $\frac{1}{2}N^2-\frac{1}{2}N$ games in a "round robin" tournament (where each team plays every other team). How many teams are there if a round robin tournament has 91 games? (Set up an equation and solve it using the factoring method. Don't solve this by any other way. *After you write down an equation, it might be a good idea to multiply through by something that clears denominators.*)

4. A triangle's base is one inch shorter than twice its height. If the area of the triangle was 138 in^2, what is the height of the triangle? (Set up an equation and solve it using the factoring method. Don't solve this by any other way. *After you write down an equation, it might be a good idea to multiply through by something that clears denominators.*)

5. The formula $S=2x^2-12x+82$ is used to model the amount of money (in billions of dollars) spent by travelers to the U.S. x years after 2000. In which year(s) was \$72 billion spent? (Set up an equation and solve it using the factoring method. Don't solve this by any other way.)