Worksheet ---- Solving Quadratic Equations

1. Solve by factoring:

   (a) $t^4 - 9t^2 + 8 = 0$

   (b) $x^{\frac{1}{2}} + 3x^{\frac{1}{4}} + 2 = 0$

2. Solve using the principle of square roots:

   (a) $5x^2 - 6 = 0$

   (b) $(x-7)^2 = -4$

3. Solve by completing the square.

   (a) $x^2 + 4x = 3$

   (b) $2x^2 + 5x + 2 = 0$

4. Solve using the quadratic formula. $\left(x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a} \right)$

   (a) $3u^2 = 18u - 6$

   (b) $5x^2 + 8x = -3$

5. Solve:

(a) $\left(x+\frac{3}{2}\right)^2=\frac{7}{2}$

(b) $3+\frac{8}{x}=\frac{1}{x^2}$

(c) $x-4\sqrt{x}=1$

(d) $3x^2-72=0$

(e) $x^2-8x-7=0$

(f) $y^2+3y+8=0$

(g) $t^{\frac{1}{3}}+2t^{\frac{1}{6}}=3$

(h) $x^3-8=0$

6. Solve for n (assume all variables represent nonnegative numbers): $N=\frac{1}{2}(n^2-n)$

[Note: N is the # of games if n teams play each other once)

7. In a basketball league, each team plays each of the other teams once. If a total of 66 games are played, how many teams are in the league?