1 - Hardy-Weinberg Equilibrium

1. 1

    I. $2Aa = 2(0.19)(0.81) = 30.78\%$
    II. $a^2 = (0.81)^2 = 65.61\%$

2. $q^2 = 9/900 = 0.01$
   $q = 0.1$
   $p = 0.9$

3. $q^2 = 0.09$
   $q = 0.3$
   $p = 0.7$
   $p^2 = 0.49 = 49\%$

4. $q^2 = 0.38$
   $q = 0.6164$
   $p = 0.3836$
   $p^2 = 0.1471 = 14.71\%$
   $2pq = 0.4729 = 47.2\%$

5. $q^2 = 65/400$
   $q = 0.4$
   $p = 0.6$
   $2pq = 0.48 = 48\%$

6. $q^2 = 40/200$
   $rh : q = 0.447 = 44.7\%$
   $Rh^+ : p = 0.553 = 55.3\%$

7. 7

    I. $w^2 = 9/100 = 0.09$
    $w = 0.3$
    $W = 0.7$

    II. $2(0.3)(0.7) = 0.42 = 42\%$

8. $a^2 = 1/1,000,000$
   $a = 0.001$
   $p = 0.999$
   $2pq = 2(0.999)(0.001)(14,000) = 27.972$
   $q^2 = (0.001)^2(14,000) = 0.014$
   $27.972 + 0.014 = 27.986 \approx 28$ people