

$$1) a) p^2 = .35 = BB$$

$$\sqrt{p^2} = \sqrt{.35}$$

$$b) p = ~~0.182~~ .59 = B$$

$$c) q = ~~0.188~~ .41 = b$$

$$a) 2(.59)(.41) = .484$$

$$q^2 + 2pq + .35 = 1$$

$$q^2 + 2p$$

$$2) a) \frac{6840}{10,000} = AA = .684 = p^2$$

$$\frac{300}{10,000} = ~~AB~~ = .030 = 2pq$$

$$\frac{2860}{10,000} = AB = .286 = q^2$$

$$b) A \text{ allele} = ~~0.182~~ .827$$

$$c) a \text{ allele} = .173$$

$$d) 25,000 \times .03 = 750 = BB$$

$$5.) \frac{98}{200} = .49$$

$$q = .7$$

$$p = .3$$

$$Aa = 2pq = 2(.7)(.3) = .42$$

42%

$$6.) \frac{230}{400} Rh+ = p^2 + 2pq$$

$$\frac{170}{400} Rh- = q^2 = .425$$

$$q = .652 = d$$

$$p = .348 = D$$

$$2pq = 2(p)(q) = 2(.652)(.348) = .453$$

$$400(.453) = \boxed{181.5}$$

181-182

$$7.) 75\% IA_1 = p = .75$$

$$25\% IA_2 = q = .25$$

$$p^2 = .563 = IA_1 IA_1$$
$$q^2 = .063 = IA_2 IA_2$$
$$2pq = 2(.75)(.25) = IA_1 IA_2$$

.375

11) B-normal
b-baldness

360 - bb

480 - Bb

160 - BB

a) $\frac{640 \text{ bald}}{1000} : \frac{360 \text{ bald}}{1000}$
norm.

b)

$$b \text{ p} = q = \frac{\sqrt{360}}{100} = .6$$

$$B = p = .4$$

c)

$$BB = .16$$
$$bb = .36$$
$$Bb = 2 \left(\frac{.4}{2} \right) \left(\frac{.6}{2} \right) = .48$$