

①

$$U + V = 1$$

$$U^2 = AA$$

$$UV = Aa$$

$$V^2 = aa$$

}

$$U^2 + UV + \frac{1}{4}V^2$$

②

1.

$$U^2 = 20\%$$

$$UV = 30\%$$

$$V^2 = ?$$

$$V^2 = 50\%$$

(2)

$$p = U + \frac{1}{2}V$$

$$q = u + \frac{1}{2}v$$

$$0.2 + \frac{0.3}{2} = 0.35 = p$$

$$0.5 + \frac{0.3}{2} = 0.65 = q$$

$$q^2 = 0.65^2 = 42.25\%$$

③

20% as it stays constant by Hardy Weinberg

③

$$U^2 = 20\%$$

$$UV = 50\%$$

$$V^2 = 30\%$$

$$p = 0.2 + \frac{0.5}{2} = 0.45$$

$$q = 0.2 + \frac{0.5}{2} = 0.45$$

$$p^2 = 20.25\%$$

iii

$$20\%$$

④

$$ex(1) (0.5, 0.7, 0.2)$$

=> converge to steady state as infected decreased

$$ex(2) (2, 0.3, 0.2)$$

=> low spread, disease dies off quick

$$ex(3) (0.2, 0.3, 0.2)$$

=> low spread disease dies out quick

$$ex(4) (1, 0.5, 0.1)$$

=> fast recovery

$$ex(5) (1, 0.3, 0.2)$$

more immune