$$(A)_{14} \overset{?}{=} \tfrac{1}{2}\left[(A)_{11} + (A)_{1NA}\right] = \tfrac{1}{2}\cdot\left[1 + 0\right] = \tfrac{1}{2}$$

$$(A)_{15} \overset{?}{=} \tfrac{1}{2}\left[(A)_{14} + (A)_{13}\right] = \tfrac{1}{2}\cdot\left[\tfrac{1}{2} + \tfrac{1}{2}\right] = \tfrac{1}{2}$$

$$(A)_{16} = \tfrac{1}{2}\left[(A)_{15} + (A)_{12}\right] = \tfrac{1}{2}\left[\tfrac{1}{2} + 0\right] = \tfrac{1}{4}$$
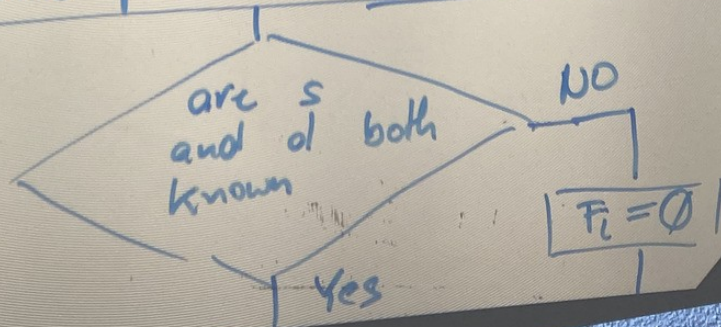
$$(A)_{22} = 1 + F_2 = 1 + \tfrac{1}{2}(A)_{NA\,NA} = 1$$

Computation of $(A)_{ii}$ requires $F_i$ and $(A)_{sd}$

$$(A)_{ii} = \underline{1 + F_i} = \underline{1 + 0.5\cdot(A)_{sd}}$$

only valid for R, if both parents s and d are known, i.e. s and d are both not NA

① | determine parent s of animal i |

② | determine parent d of animal i |

are s and d both known

NO

Yes

$\boxed{F_i = 0}$

if-statement