

① age > 40, in com low

$$P(\text{buy} | \text{age} > 40, \text{in com low})$$

$$P(\text{buy} | \text{age}) = \frac{3}{9}$$

$$P(\text{not buy} | \text{age}) = \frac{2}{5}$$

$$P(\text{buy} | \text{in com low}) = \frac{3}{9}$$

$$P(\text{not buy} | \text{in com low}) = \frac{1}{5}$$

$$\text{buy} = \frac{3}{9} \times \frac{3}{9} = 0.11$$

$$\text{not buy} = \frac{2}{5} \times \frac{1}{5} = 0.08$$

$$0.11 \times 0.64 = 0.70 \quad \checkmark$$

$$0.08 \times 0.35 = 0.02$$

② P(buy | age 31-40, incem high)

$$P(\text{buy} | \text{age}) = \frac{5}{12}$$

$$P(\text{not buy} | \text{age}) = \frac{1}{8}$$

$$P(\text{buy} | \text{high}) = \frac{2}{9}$$

$$P(\text{not buy} | \text{high}) = \frac{2}{5}$$

$$P(x | \text{buy}) = \frac{5}{12} \times \frac{2}{9} = 0.09259$$

$$P(x | \text{not buy}) = \frac{1}{8} \times \frac{2}{5} = 0.05$$

$$0.09259 \times 0.643 = 0.5953 \quad \checkmark$$

$$0.05 \times 0.357 = 0.01785$$