

age	income	student	credit_rating	buys_computer
<=30	high	no	fair	no
<=30	high	no	excellent	no
31...40	high	no	fair	yes
>40	medium	no	fair	yes
>40	low	yes	fair	yes
>40	low	yes	excellent	no
31...40	low	yes	excellent	yes
<=30	medium	no	fair	no
<=30	low	yes	fair	yes
>40	medium	yes	fair	yes
<=30	medium	yes	excellent	yes
31...40	medium	no	excellent	yes
31...40	high	yes	fair	yes
>40	medium	no	excellent	no

Normal

age >40, income low

$$P(x | \text{buy} = \text{yes}) = \cancel{\frac{1}{9}} \times \cancel{\frac{1}{9}}$$

$$P(x | \text{buy} = \text{no}) = \frac{2}{5} \times \frac{1}{5}$$

$$P(\text{age} > 40 | \text{buy} = \text{yes}) = \frac{1}{9}$$

$$P(\text{age} > 40 | \text{buy} = \text{no}) = \frac{2}{5}$$

$$P(\text{income low} | \text{buy} = \text{yes}) = \frac{1}{9}$$

$$P(\text{income low} | \text{buy} = \text{no}) = \frac{1}{5}$$

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

$$P(\text{income high} | \text{buy} = \text{no}) = \frac{2}{5}$$

Normal

$$P(x | \text{buy} = \text{yes}) = \cancel{\frac{1}{9}} \times \cancel{\frac{1}{9}} \times \cancel{\frac{1}{14}} = \frac{1}{21}$$

$$P(x | \text{buy} = \text{no}) = \frac{2}{5} \times \frac{2}{5} \times \frac{1}{14} = \frac{2}{35}$$

P(buy)

$$\times \cancel{\frac{1}{14}} = \frac{1}{14} = 0.071$$

$$\times \frac{1}{14} = \frac{2}{40} = 0.028$$

P(no)

$$(31-40 | \text{buy} = \text{yes}) = \frac{4}{9} \quad \frac{5}{12} \quad \text{Laplace}$$

$$(31-40 | \text{buy} = \text{no}) = \frac{0}{5} \quad \frac{1}{8}$$

0.0545

$$P(x | \text{buy} = \text{yes}) = \frac{2}{9} \times \frac{1}{12} \times \frac{1}{14} = \frac{1}{84}$$

$$P(x | \text{buy} = \text{no}) = \frac{2}{5} \times \frac{1}{8} \times \frac{1}{14} = \frac{1}{140}$$

0.0071