

1 - Variables

La aeronave pasante A

y A^c el complemento de A que se refiere que la aeronave no está presente

$$P(A) = 7\%$$

$$P(A^c) = 100\% - 7\% = 93\%$$

Aeronave detectada $\hat{=}$ D
por el radar

Aeronave no detectada $\hat{=}$ D^c
por el radar

2 - Queda

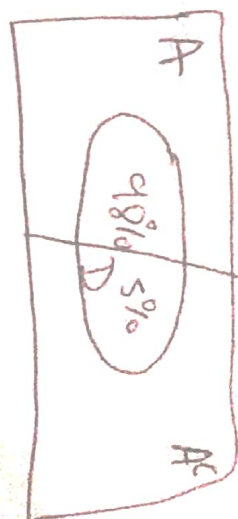
$$P(D/A) = 98$$

$$P(D/A^c) = 5$$

3 - Pregunta del enunciado

4 - Diseñar

a)



5 - a)

$$P(A^c/D) =$$

$$\frac{P(D/A^c) P(A^c)}{P(D/A^c) P(A^c) + P(D/A) P(A)}$$

=

$$\frac{5\% \times 93\%}{5\% \times 93\% + 98\% \times 7\%}$$

$$= 0,40$$

$$= 0,40$$

$$b) P(A/D) =$$

$$\frac{P(D/A) P(A)}{P(D/A) P(A) + P(D/A^c) P(A^c)}$$

=

$$\frac{0,98 \times 0,07}{0,98 \times 0,07 + 0,05 \times 0,93}$$

$$= 0,59$$

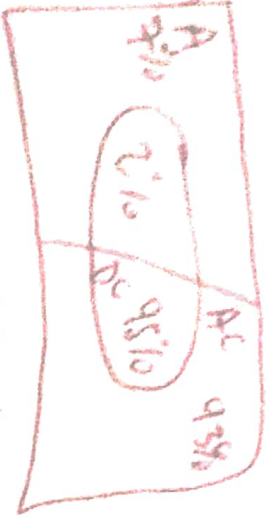
0,59

8-02-2020

c)

$$P(D^c/A) = 100\% - 98\% = 2\%$$

$$P(D^c/A^c) = 100\% - 5\% = 95\%$$



$$P(A|D^c) = \frac{P(D^c/A)P(A)}{P(D^c/A)P(A) + P(D^c/A^c)P(A^c)}$$

$$= \frac{0.02 \times 0.02}{0.02 \times 0.02 + 0.95 \times 0.98}$$

$$= 0.0016$$

=

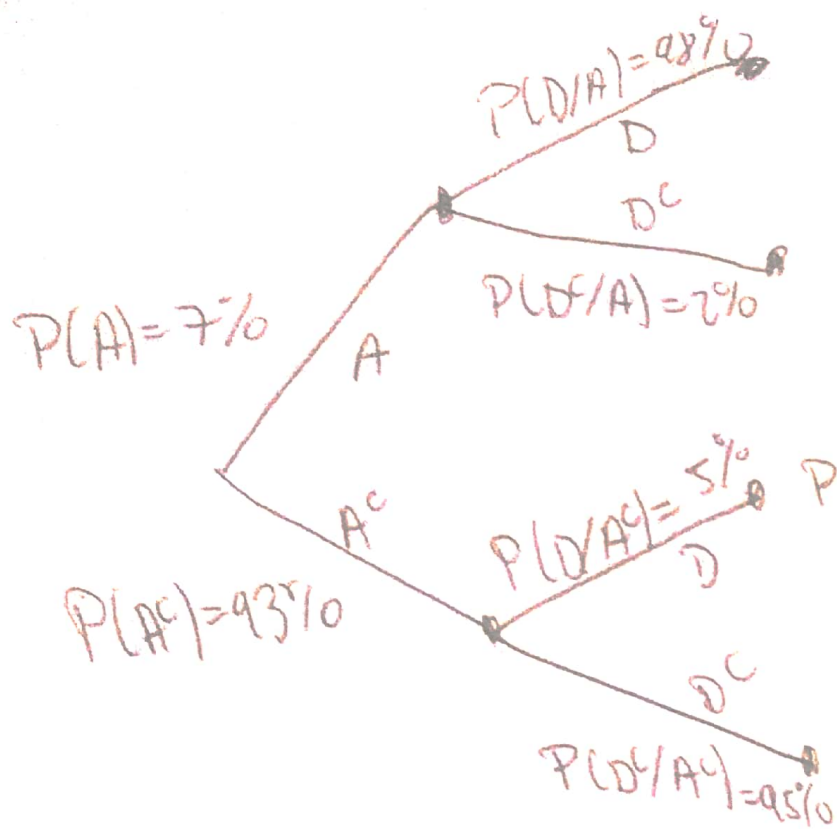
d)

$$P(A^c|D^c) = \frac{P(D^c/A^c)P(A^c)}{P(D^c/A^c)P(A^c) + P(D^c/A)P(A)}$$

$$= \frac{0.95 \times 0.98}{0.95 \times 0.98 + 0.02 \times 0.02}$$

$$= 0.99$$

$$= 0.99$$



$$P(A \cap D) = P(D|A) \times P(A) = 98\% \times 7\%$$

$$P(A^c \cap D) = P(D|A^c) \times P(A^c) = 5\% \times 93\%$$

$$P(A^c \cap D^c) = P(D^c|A^c) \times P(A^c) = 95\% \times 93\%$$

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