C = "cefalàgia"

X = " numero de pacients amb cefalàgia "

$X \sim B(n, p)$ $n = 6$ $p = 0'01$

$$P(X = k) = \binom{n}{k} p^k (1-p)^{n-k}$$

a] $P(X = 0) = \binom{6}{0}(0'01)^0 \cdot (0'99)^6 =$

$$= 0'99^6 = \boxed{0'9415}$$

$$= dbinom(0, 6, 0.01)$$

b] $P(X > 1) = P(X = 2) + P(X = 3) + \ldots + P(X = 6)$

$$= 1 - P(X \leq 1)$$

$$= 1 - (P(X = 0) + P(X = 1))$$

$$= 1 - (0'99^6 + 6 \cdot 0'01 \cdot 0'99^5$$

$$= 1 - (pbinom(1, 6, 0.01))$$

$$= 1 - (dbinom(0, 6, 0.01)$$

$$+ dbinom(1, 6, 0.01)$$

$$= 1 - 0'9986 = \boxed{0'0014}$$

c] $X \sim B(n, p)$ $E(X) = np$

                    $Var(X) = np(1-p)$

$n = 1000$ $p = 0.01$

$E(X) = 1000 \cdot 0'01 = \boxed{10}$

$Var(X) = 1000 \cdot 0'01 \cdot 0'99 = 9'9$

             $Des(X) = \sqrt{9'9} = \boxed{3'1464}$