

Vecka 17, Lektion 3

Bac 2016 B3

- a) A – Katt äter fisk
 B – Katten jagar möss

$$p(A) = 0.15$$

$$p(\neg A) = 0.85$$

$$p(B|A) = 0.12$$

$$p(B|\neg A) = 0.80$$

$$p(B \cap A) = p(B|A) * p(A)$$

$$p(B \cap A) = 0.12 * 0.15 = 0.018$$

$$p(B \cap \neg A) = p(B|\neg A) * p(\neg A)$$

$$p(B \cap \neg A) = 0.80 * 0.85 = 0.68$$

$$p(B) = p(B \cap A) + p(B \cap \neg A)$$

$$p(B) = 0.018 + 0.68 = 0.698$$

b)
$$p(A|B) = \frac{p(B \cap A)}{p(B)}$$

$$p(A|B) = \frac{0.018}{0.698} = 0.025788$$

c)
$$p = 0.85$$

$$n = 100$$

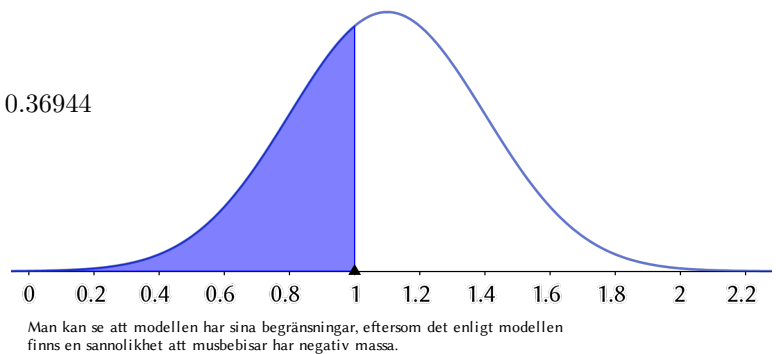
$$p(X \geq 90) = \text{binomCdf}(100, 0.85, 90, 100) = 0.09945$$

d)
$$\mu = 1.1 \text{ g}$$

$$\sigma = 0.3$$

$$p(X \leq 1.0) = \text{normCdf}(-\infty, 1, 1.1, 0.3) = 0.36944$$

Sannolikheten att musbebisar väger mindre än 1.0 gram är 36.9%



e)
$$p(X \leq x) = 0.75$$

$$x = \text{invNorm}(0.75, 1.1, 0.3) = 1.30235$$

