

$$\begin{aligned} (c) \quad P(10 \leq X \leq 15) &= P(X \leq 15) - P(X \leq 9) \\ &= \text{binomialcdf}(40, 1/2, 15) - \text{binomialcdf}(40, 1/2, 9) \\ &= 0.0766 \end{aligned}$$

$$(d) \quad E(X) = np = 40 \cdot \frac{1}{2} = 20$$

$$(e) \quad \sigma^2 = npq = 40 \cdot \frac{1}{2} \cdot \frac{1}{2} = 10$$

(f) The standard deviation:

$$\sigma = \sqrt{10} \approx 3.16$$

(g) What's the probability of an outcome within 1 standard deviation of the mean?

$$P(16.8 \leq X \leq 23.2) = 0.732$$

$17 \leq X \leq 23$

M
7

W
9



TEST

probability
distributions

T
15