

C

Survival Distribution Function

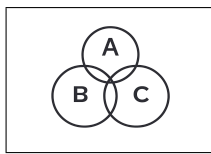
C

$$S(x) = P(X > x)$$

$$P(x < 0) = 1$$

$$P(0 \leq x \leq 10) = 1 - \frac{x}{10}$$

$$P(x > 10) = 0$$



$$F(x) = 1 - S(x)$$

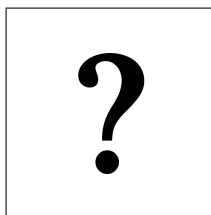
$$F(x < 0) = 0$$

$$F(0 \leq x \leq 10) = x/10$$

$$F(x > 10) = 1$$

$$P(3 < X \leq 7) = F(7) - F(3) = \frac{7}{10} - \frac{3}{10} = \boxed{0.4}$$

$$P(3 < X \leq 7) = S(3) - S(7) = \left(1 - \frac{3}{10}\right) - \left(1 - \frac{7}{10}\right) = \boxed{0.4}$$



$$S(x < 0) = 1$$

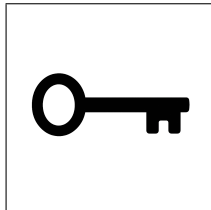
$$S(0 \leq x \leq 120) = (1 - 1/120)^{1/6}$$

$$S(x > 120) = 0$$

$$P(X > 25) = ?$$

C

Survival Distribution Function

C

$$S(x < 0) = 1$$

$$S(0 \leq x \leq 120) = (1 - 1/120)^{1/6}$$

$$S(x > 120) = 0$$

$$P(X > 25) = ?$$

$$P(X > 25) = S(25)$$

$$S(25) = (1 - \frac{25}{120})^{1/6}$$

$$S(25) = (\frac{95}{120})^{1/6}$$

$$S(25) = (\frac{19}{24})^{1/6}$$

$$S(25) \approx \boxed{0.962}$$