

# B

## Survival Distribution Function

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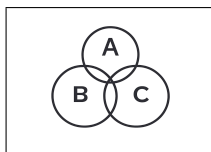


$$S(x) = P(X > x)$$

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

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

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



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

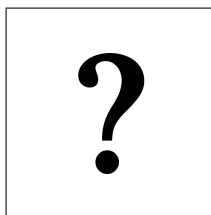
$$F(x < 0) = 0$$

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

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

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

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



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

$$S(0 \leq x \leq 100) = 1 - x/100$$

$$S(x > 100) = 0$$

$$CDF = ?$$

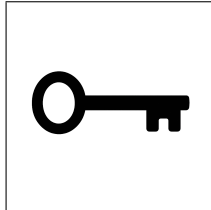
$$P(X < 30) = ?$$

$$P(X > 70) = ?$$

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

$$S(0 \leq x \leq 100) = 1 - x/100$$

$$S(x > 100) = 0$$

$$CDF = ?$$

$$P(X < 30) = ?$$

$$P(X > 70) = ?$$

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$$S(x) = P(X > x) = 1 - \frac{x}{100}$$

$$F(x) = P(X \leq x) = 1 - S(x) = \frac{x}{100}$$

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$$P(X < 30) = F(30) = \frac{30}{100} = 0.30$$

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$$P(X > 70) = S(70) = 1 - \frac{70}{100} = 0.30$$