Question 1 Answer:

a) P(even number) $= \dfrac{3}{6} = \dfrac{1}{2}$

b) P(queen given that the card drawn is red) $= \dfrac{\# \ of \ queens}{\# \ of \ red \ cards} = \dfrac{2}{26} = \dfrac{1}{13}$

c) P(defect-free) = 1 – P(defect) = 1 – 0.2 = 0.8

Question 2 Answer:

A: success for product A

B: success for product B

P(A U B) = P(A) + P(B) – P(A ∩ B) = 0.6 + 0.5 – 0.3 = 0.8

Question 3 Answer:

A: task A being completed on time

B: task B being completed on time

C: task C being completed on time

P(A ∩ B ∩ C) = P(A) x P(B) x P(C) = 0.8 x 0.7 x 0.9 = 0.504

Question 4 Answer:

P(D | A) = 0.03

P(D | B) = 0.05

P(A) = 0.6

P(A ∩ D) = P(A) x P(D | A) = 0.6 x 0.03 = 0.018

Question 5 Answer:

a) Bandwagon effect
b) Confirmation bias
c) Dunning-Kruger effect
d) Availability cascade
e) Framing effect