Class Practice on Probability #1

A box has slips of paper numbered 1, 2, 3, …, 15. An experiment consists of selecting one piece of paper at random.

Let event A = the number is even

Let event B = the number is greater than or equal to 7

Determine the following probabilities:

a. $P(A)$

b. $P(B)$

c. List the favorable sample points for the event A and B and then determine $P(A \text{ and } B)$

Favorable sample points are _________________________________

$P(A \text{ and } B) =$

d. List the favorable sample points for the event A or B and then determine $P(A \text{ or } B)$

Favorable sample points are _________________________________

$P(A \text{ or } B) =$

e. Find $P(\text{neither even nor greater than or equal to 7})$

Hint: First list the favorable sample points.
Answers

Determine the following probabilities:

a. \( P(A) = \frac{7}{15} \)

b. \( P(B) = \frac{9}{15} = \frac{3}{5} \)

c. List the favorable sample points for the event A and B and then determine \( P(A \text{ and } B) \)

Favorable sample points are ___8, 10, 12, 14___________________

\( P(A \text{ and } B) = \frac{4}{15} \)

d. List the favorable sample points for the event A or B and then determine \( P(A \text{ or } B) \)

Favorable sample points are __2, 4, 6, 8, 10, 12, 14, 7, 9, 11, 13, 15___

\( P(A \text{ or } B) = \frac{12}{15} = \frac{4}{5} \)

e. Find \( P(\text{neither even nor greater than or equal to 7}) \)

Hint: First list the favorable sample points.

Favorable sample points are _____1, 3, 5_____

So, \( P(\text{neither even nor greater than or equal to 7}) = \frac{3}{15} = \frac{1}{5} \)