Theoretical Probability

A fair dice is rolled once. What is the probability that the dice lands on:
- (a) 1
- (b) 4 or more
- (c) a prime number
- (d) a factor of 6
- (e) 7
- (f) not 5

(a) $\frac{1}{6}$ (b) $\frac{1}{2}$

(c) $\frac{1}{2}$ (d) $\frac{2}{3}$

(e) 0   (f) $\frac{5}{6}$

A fair spinner has 8 equal sections, numbered 1 to 8. If the spinner is spun once, what is the probability that it lands on:
- (a) an even number
- (b) a number less than 4
- (c) 1 or 2
- (d) a number less than 10
- (e) not a prime number

(a) $\frac{1}{2}$ (b) $\frac{3}{8}$

(c) $\frac{1}{4}$ (d) 1

(e) $\frac{1}{2}$

A bag contains 3 red balls, 6 blue balls and 5 yellow balls. A ball is picked at random. What is the probability that:
- (a) the ball is red
- (b) the ball is blue or yellow
- (c) the ball is not blue
- (d) the ball is white

(a) $\frac{3}{14}$ (b) $\frac{11}{14}$

(c) $\frac{8}{14} = \frac{4}{7}$ (d) 0

A letter is chosen at random from the word {S T A T I S T I C S}. What is the probability that the letter is:
- (a) an S
- (b) a C or a T
- (c) a vowel
- (d) not a T

(a) $\frac{3}{10}$ (b) $\frac{4}{10} = \frac{2}{5}$

(c) $\frac{3}{10}$ (d) $\frac{7}{10}$

At brunch, Tomek has a choice of toast, croissant or pain au chocolat. If $P(toast) = 0.25$ and $P(croissant) = 0.35$, what is the probability that Tomek chooses pain au chocolat?

$P(\text{pain au choc}) = 0.4$

Bag A contains 5 red balls and 7 white balls. Bag B contains 3 red balls and 5 white balls. From which bag do you have the highest probability of choosing a white ball at random?

A $P(A) = \frac{7}{12}$ $\frac{5}{8} > \frac{7}{12}$

B $P(B) = \frac{5}{8}$ So B