WORKSHEET 2 PROBABILITY – CHAPTER 15

HOW DO YOU KNOW THAT CARROTS ARE GOOD FOR YOUR EYESIGHT?

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1 Indicate whether the following events are **certain, likely, an even chance, unlikely** or **impossible to occur.**

(a) There will be a blue moon tonight.
(b) If bought a lottery ticket, I would win first prize.
(c) A new car will not have any defects.
(d) The next child born in the hospital is a girl.

2 Find the total number of possible outcomes (**sample space**) for the following experiments.
(a) Choosing a vowel from the word Mathematics.
(b) Choosing a red ball from 8 different coloured balls, which includes one red ball.
(c) Choosing an ace from a standard pack of playing cards.

3 Match the following words indicated with these probabilities
I) 0   II) between 0 and 0.5   III) 0.5   IV) between 0.5 and 1   V) 1
(a) fifty-fifty chance   (b) impossible   (c) possible
(d) more than likely   (e) probable   (f) improbable

4 At a fete, tickets numbered from 1 to 100 were issued and one ticket was chosen at random. What is the chance of getting the lucky door prize for getting the following ticket numbers: using certain, likely, even chance, unlikely, and impossible.
(a) above 50   (b) 50   (c) between 75 and 100
(d) 101   (e) less than 20   (f) greater than 90

5 An octagon divided into 8 triangles. 3 Red, 3 Blue 2 Yellow
If we spun this eight-sided spinner, what is the probability of obtaining a:
(a) red   (b) yellow   (c) red or blue
(d) brown   (e) not red or yellow   (f) red, blue or yellow

6 Jose rolls a 12 sided die with faces numbered 1 to 12.
What is the probability of obtaining:
(a) even number greater than 7   (b) odd number divided by 3   (c) a multiple of 3
(d) 5 or 6   (e) greater than 5   (f) number between 2 and 7

7 A bag contains 3 Red, 2 Green, 3 Black counters. One counter is chosen at random. Find the probability that this counter will be:
(a) green   (b) black   (c) green or black
(d) not green or black (e) pink   (f) not red

8 From a well shuffled pack of 52 playing cards, one card is chosen at random. What is the probability that the card chosen is:
(a) a 10   (b) joker
(c) a spade   (d) red 8

9 What is the probability of choosing one card at random from a pack of playing cards?
(a) black ace   (b) not a black card
(c) red or black card   (d) an ace of hearts and queen of diamonds

10 From a well shuffled pack of 52 playing cards, one card is chosen at random. What is the probability that the card chosen is:

(a) 3 or 4   (b) not an ace   (c) not a spade

(d) not a 10   (e) diamond   (f) black or red card

11 True or False?

(a) There are 26 letters in the alphabet. If we choose one letter at random from a page from the Sydney Morning Herald then the probability that it will be a Z will be $\frac{1}{26}$

(b) The first two children in the Jones family are boys, therefore the probability of getting a girl for the third child will be greater than $\frac{1}{2}$

(c) Jacques tossed 5 consecutive heads with a coin. The probability of tossing another head with the sixth throw is less than 1 in 2 chance as we just had a run on heads.

12 Kim rolls a normal die. Find the probability of obtaining:

(a) 4   (b) not a 4   (c) number less than 3

(d) number not less than 3   (e) not a number less than 5   (f) not an even number

13 Clare rolls a normal die. Find the probability of obtaining:

(a) 1 or 2   (b) 6   (c) not a 6   (d) less than 6

14 True or False?

A number less than 4 on a die and a number greater than 4 on a die are complementary.

15 True or False?

The probability of choosing a card which is a red king or a black queen from a pack of a well-shuffled playing cards is the same.

16 Complete this statement:

"The sum of the probability of an event and the probability of its complementary event is equal to ......"

Answers:

A	B	E	G	H	I	L	N
$\frac{1}{13},0$ $\frac{1}{4},\frac{1}{26}$	1	III, I II, IV IV, I	Even, unlikely Unlikely, imp. Unlikely, unlikely	$\frac{3}{8},\frac{1}{4}$ $\frac{5}{8},0$ $\frac{3}{8},1$	$\frac{1}{4},\frac{1}{6}$ $\frac{1}{3},\frac{1}{6}$ $\frac{7}{12},\frac{1}{3}$	$\frac{1}{26},\frac{1}{2}$ $1,\frac{1}{26}$	$\frac{2}{3},\frac{12}{13}$ $\frac{3}{4},\frac{12}{13}$ $\frac{1}{4},1$

O	R	S	T	U	V	W	Y
F F F	$\frac{1}{6},\frac{5}{6}$ $\frac{1}{3},\frac{2}{3}$ $\frac{1}{6},\frac{1}{2}$	Impossible Unlikely Unlikely even	$\frac{1}{3},\frac{1}{6}$ $\frac{5}{6},\frac{5}{6}$	F	$\frac{11}{8}$ $\frac{8}{52}$	$\frac{1}{4},\frac{3}{8}$ $\frac{5}{8},\frac{3}{8}$ $0,\frac{5}{8}$	T

$$\overline{5 \quad 8 \quad 2 \quad 3} \qquad \overline{15 \quad 11 \quad 14} \quad \overline{3 \quad 2 \quad 3 \quad 12}$$

$$\overline{1 \quad 3 \quad 3 \quad 10} \quad \overline{8} \qquad \overline{12 \quad 8 \quad 16 \quad 16 \quad 6 \quad 13 \quad 13}$$

$$\overline{7 \quad 3 \quad 8 \quad 12 \quad 6 \quad 10 \quad 4} \qquad \overline{4 \quad 9 \quad 8 \quad 1 \quad 1 \quad 3 \quad 1}$$