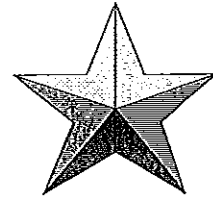


## WORKSHEET 3 PROBABILITY – CHAPTER 15

### WHAT SORT OF STAR IS DANGEROUS?

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

- (a) The chance of throwing a head with a double headed coin.
- (b) The chance of throwing a tail with a double headed coin.
- (c) The next child born in the hospital is a girl.
- (d) I will win LOTTO in the next draw.

2 A 12-sided spinner is spun. If 4 parts are yellow, 3 parts black and remainder red, find the chance of spinning the colour:

- (a) yellow
- (b) red
- (c) not black

3 Compare and order from the least to the most likely.

- (A) Christmas day is on the 25 December
- (B) an earthquake will hit a major Australian city tomorrow
- (C) throw an even number with a roll of a die
- (D) It will snow in Perisher next winter.

4 If we tossed one die, what is the chance of obtaining:

- (a) greater than 4
- (b) less than 3
- (c) an odd number
- (d) 7

5 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

6 Boyd spun the octagonal spinner (i.e. with 8 numbers)

What is the probability of obtaining:

- (a) odd number less than 5
- (b) 1 or 2
- (c) not 8
- (d) multiple of 3

7 A bag contains 3 Blue, 2 Green, 2 Yellow counters. One counter is chosen at random and its colour noted. How many coloured counters are there in the bag. Hence find the probability that this counter will be:

- (a) blue
- (b) green or yellow
- (c) not green or yellow
- (d) not green

8 From a well shuffled pack of 52 playing cards, one card is chosen at random. Find the probability that the card will be a:

- (a) 10
- (b) queen or king
- (c) black jack
- (d) a picture card
- (e) club
- (f) club or red card

9 From a well shuffled pack of 52 playing cards, one card is chosen at random. Find the probability that the card will be a:

- (a) red or black card
- (b) 9 or 10
- (c) not a black card
- (d) not an ace
- (e) joker
- (f) not 2 or 3

10 True or False?

- (a) The probability that a switch is on is  $\frac{1}{2}$ . If there is a sequence of switches and we found that the first 2 were switched on it is more than likely that the third switch is switched off.  
 (b) The probability of choosing the letter M at random from the word MATHEMATICS is the same as any other letter in the word.

11 Indicate whether the following "Aussie expressions" are one of the following: impossible, most unlikely, even chance, most likely, certain

- (a) He's got 2 chances, Buckley's and none  
 (b) That's a one in 100 year flood  
 (c) It happens once every blue moon  
 (d) If it is likely to go wrong; it will go wrong! (Murphy's Law)  
 (e) There is a fat chance that it will happen.

12 26 letters of the alphabet are written on cards and placed in a bag. If one card is drawn at random, what is the probability that it is:

- (a) D (b) a vowel (c) D or E  
 (d) a consonant (e) X, Y, Z (f) a letter from the word MATHS

13 Josh has a drawer which contains 4 black socks, 3 white socks and 2 brown socks. During the night he drew one sock at random. What is the chance that the sock will be:

- (a) black (b) white (c) either black or white  
 (d) either white or brown (e) not white or brown (f) black or white or brown

Answers:

A	A	G	H	I	N	O	O
$\frac{1}{3}, \frac{5}{12}$	$\frac{1}{13}, \frac{2}{13}$	$\frac{1}{3}, \frac{1}{3}$	$1, \frac{2}{13}$	Impossible Most unlikely	$\frac{1}{26}, \frac{5}{26}$	$\frac{1}{4}, \frac{1}{4}$	F F
$\frac{3}{4}$	$\frac{1}{26}, \frac{3}{13}$	$\frac{1}{2}, 0$	$\frac{1}{2}, \frac{12}{13}$	Most unlikely	$\frac{1}{13}, \frac{5}{26}$	$\frac{7}{8}, \frac{1}{4}$	
	$\frac{1}{4}, \frac{3}{4}$		$0, \frac{11}{13}$	impossible	$\frac{3}{26}, \frac{5}{26}$		

R	S	S	T	T
Certain	Even, unlikely	$\frac{3}{7}, \frac{4}{7}$	B	$\frac{4}{9}, \frac{1}{3}$
Impossible	Unlikely, imp.	$\frac{3}{7}, \frac{5}{7}$	C	$\frac{7}{9}, \frac{5}{9}$
Even	Unlikely, unlikely	$\frac{3}{7}, \frac{5}{7}$	D	$\frac{4}{9}, 1$
unlikely			A	

8 5 9 6 10 13 11 12 4 7 3 2 1