

# Statistics Post-Test

## Juniors

### Probability

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**Year:** (circle)      9      10

**Name:** \_\_\_\_\_

**Tutor Group:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_

### Question 1

Circle the best label that best describes the chance of the next baby to be born in New Zealand will be a girl.

Certain, good chance, even chance, poor chance, impossible

### Question 2

When Sally flips a coin, what are the chances of the coin landing tails up?

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### Question 3

Sarah has a bag with 1 yellow hair tie and 4 blue hair ties. She closes her eyes and selects a hair tie. What is the chance:

- a) What chance does Sarah have of selecting a red hair tie?

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- b) What chance does Sarah have of selecting a blue hair tie?

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**Question 4**

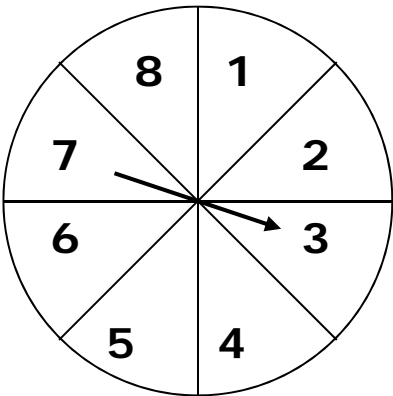
If the pointer is spun, find the probability that it stops at:

- a) a seven

\_\_\_\_\_
- b) a number less than five

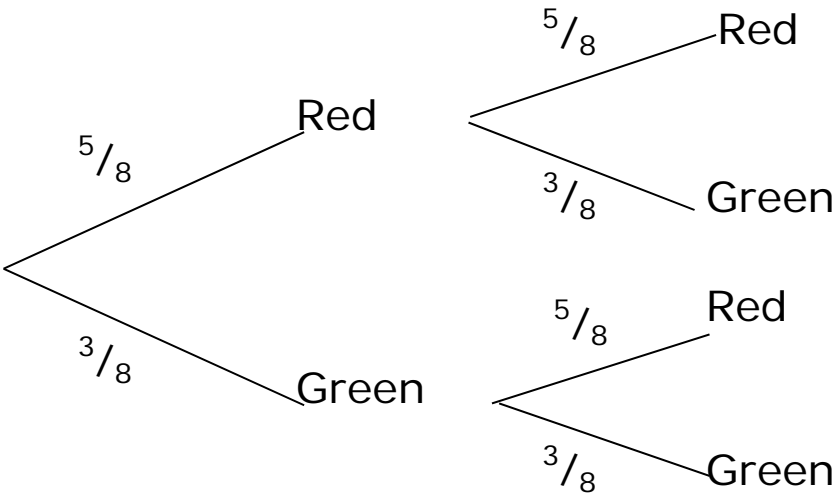
\_\_\_\_\_
- c) an odd number

\_\_\_\_\_



**Question 5**

The probability tree below demonstrates picking two marbles out of a bag which contains 8 marbles; 5 red and 3 green. The marble is replaced when it has been picked out.



Find:

- a) P(two reds are picked from the bag)

\_\_\_\_\_
- b) P(a red then a green is picked from the bag)

\_\_\_\_\_
- c) P(only one of the two marbles picked is red)

\_\_\_\_\_

### Question 6

If a card is selected at random from a pack of 52, find the probability it is:

- a) a spade \_\_\_\_\_
- b) not a spade \_\_\_\_\_
- c) a King, Queen or Jack \_\_\_\_\_
- d) the ace of spades \_\_\_\_\_



### Question 7

A pack of 52 cards is shuffled and two cards drawn, NOT replacing the first card back in the pack.

- a) What is the probability that both cards drawn are Hearts?

\_\_\_\_\_

- b) If this process is repeated 40 times, how many times would both cards drawn be Hearts?

\_\_\_\_\_

S6

Probabilty Assessment for:\_\_\_\_\_

| Level 2    | Level 3     | Level 4     |            | Level 5    |            | Level 6    |
|------------|-------------|-------------|------------|------------|------------|------------|
| Question 1 | Questions 2 | Questions 3 | Question 4 | Question 5 | Question 6 | Question 7 |
|            |             |             |            |            |            |            |

Overall Level:

Probabilty Assessment for:\_\_\_\_\_

| Level 2    | Level 3     | Level 4     |            | Level 5    |            | Level 6    |
|------------|-------------|-------------|------------|------------|------------|------------|
| Question 1 | Questions 2 | Questions 3 | Question 4 | Question 5 | Question 6 | Question 7 |
|            |             |             |            |            |            |            |

Overall Level:

## Example answers

|         |            |     |  |
|---------|------------|-----|--|
| Level 2 | Question 1 |     | Even chance  |
| Level 3 | Question 2 |     | 50% or 0.5 or even chance  |
| Level 4 | Question 3 | (a) | 0/5 or 0% or 0   |
|         |            | (b) | 4/5 or 0.8 or 80%  |
|         | Question 4 | (a) | 1/8 or 0.125 or 12.5%  |
|         |            | (b) | 4/8 or 0.5 or 50%  |
|         |            | (c) | 4/8 or 0.5 or 50%  |
| Level 5 | Question 5 | (a) | $5/8 \times 5/8 = 25/40$ or 5/8 or 0.625 or 62.5%                  |
|         |            | (b) | $5/8 \times 3/8 = 15/40$ or 3/8 or 0.325 or 32.5%                  |
|         |            | (c) | $5/8 \times 3/8 + 3/8 \times 5/8 = 30/40$<br>or 3/4 or 0.75 or 75% |
|         | Question 6 | (a) | 13/52 or 1/4 or 0.25 or 25%  |
|         |            | (b) | 39/52 or 3/4 or 0.75 or 75%  |
|         |            | (c) | 12/52 or 3/13 or 0.2308 (4.d.p) or 23.08%                          |
|         |            | (d) | 1/52 or 0.0192 (4.d.p) or 1.92%                                    |
| Level 6 | Question 7 | (a) | $13/52 \times 12/51 = 156/2652$ or 0.0588 (4.d.p) or 5.88%         |
|         |            | (b) | $E(X) = 40 * 0.0588 = 2.4$   |