**Grade 6 Practice Test: Probability Name: ANSWERS**

**Part A**

1. The grade 7’s in division 1 made a graph of their favourite movies.

**Number of Students**

**Movies**

1. How many grade 7’s are in division 1? **17 students**
2. Each student writes in their favourite movie on a slip of paper and places it in a bag. Their teacher Ms. B draws one slip without looking. Use **words**, **a fraction**, **a decimal**, and **a percent** to describe the probability of each event.
* Ms. B draws Big Hero 6.

**Unlikely, 5/17, 0.29, 29%**

* Ms. B draws The Jungle Book.

**Unlikely, 1/17, 0.058, 5.8% (0.06, 6%)**

* Ms. B draws Zootopia.

**Unlikely, 6/17, 0.35, 35%**

1. Eric rolls an octahedron labelled A, B, B, B, C, C, C, C.

B

C

C

B

C

B

A

C

What’s the probability the octahedron will land on each letter? Express your answers in both fractions and percentage.

A: $\frac{1}{8}$ **; 12.5%**

B: $\frac{3}{8}$ **; 37.5%**

C: $\frac{4}{8}$ **or** $\frac{1}{2}$ **; 50%**

**Part B**

1. Jeannie has a jar filled with pennies. The jar has 100 pennies. Suppose she selects a penny from the jar without looking. There is a 40% chance that she will draw a penny from the 1970s. How many pennies from the 1970s are in Jeannie’s jar? Explain your thinking.

**There are 40 pennies in Jeannie’s jar. This is because 100% of 100 is 100, and 40% of 100 is 40.**

If there are 100 pennies and 40% are from the 1970s, and 40% of 100 is 40, then 40 pennies are from the 1970s in Jeannie’s jar.

1. \*\*Difficult\*\* There are 20 blue tiles, 32 red tiles, and 18 green tiles in a bag.
2. Suppose you plan to conduct this experiment 50 times:

How many tiles of each colour do you *expect to get*?

* **Blue Tiles =** $\frac{20}{70}$ **= 0.2857 x 50 = ~15 tiles**
* **Red Tiles =** $\frac{32}{70}$ **= 0.4571 x 50 = ~22 tiles**
* **Green Tiles =** $\frac{18}{70}$ **= 0.2571 x 50 = ~13 tiles**
1. Andrea conducted the experiment by drawing a tile *and putting it back into the bag again*. She drew a red tile 60 times out of 70. Did Andrea do something wrong? Explain.

No, an experiment (experimental probability) is different from theory (theoretical probability). We can’t say it’s wrong because it is all chance. There are 70 tiles in total and it is possible to get a red tile each time I draw it out.

**Part C**

1. Suppose you are playing a game.

You have a number cube with faces labelled: **1**, 2, **3**, **5**, **5**, 6

You have a regular octahedron with faces labelled: **1**, **1**, 2, 2, 2, **3**, **3**, **3**

To win a prize, you must roll an odd number.

1. Which solid would you roll? Use words and a number line to help explain your answer.

**I would roll the number cube, because it is more likely than the octahedron in rolling an odd number.**

**Number cube = 4/6 = 0.66666… = 0.67**

**Octahedron = 5/8 = 0.625 = 0.63**

0.67

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| --- | --- |
|   |   |
|  0.5 |  0.631.0 |

0

1. John was asked to do the same activity, but instead of putting in the work to figure out the answer using probability, he randomly chose a solid. He rolled it 100 times and got an odd number 50 times. Is it possible to find out which solid he rolled? Yes or no? Explain your answer below.

**No it isn’t. Again, when it comes to experimental probability, anything is possible. We can’t find out for sure what solid was used because any of the two solids (the number cube with a 4/6 chance or the octahedron with a 5/8 chance) could have an outcome of getting an odd number 50 times out of 100 or 50/100.**