Statistics and Probability (Data Analysis) Review Booklet 3

1. Create, label and interpret line graphs to draw conclusions.
* Determine the common attributes (title, axes and intervals) of line graphs by comparing a given set of line graphs.
* Determine whether a given set of data can be represented by a line graph (continuous data) or a series of points (discrete data), and explain why.
* Create a line graph from a given table of values or a given set of data.
* Interpret a given line graph to draw conclusions.

Consider the following data:

|  |  |
| --- | --- |
| Time (s) | Distance (m) |
| 0 | 0 |
| 1 | 4 |
| 2 | 8 |
| 3 | 12 |
| 4 | 16 |
| 5 | 20 |
| 6 | 24 |

1. Construct an appropriate graph for the data above

(use the appropriate graphing conventions)

1. Is the data continuous or discrete? Explain.

Consider the following data:

|  |  |
| --- | --- |
| Animals | quantity |
| bears | 5 |
| Zebras | 12 |
| monkeys | 8 |
| tigers | 4 |
| hippos | 2 |

1. Construct an appropriate graph

for the data above

1. Is the data continuous or discrete?

Explain.

1. Select, justify and use appropriate methods of collecting data, including:

• questionnaires

• experiments

• databases

• electronic media.

* Select a method for collecting data to answer a given question, and justify the choice.
* Design and administer a questionnaire for collecting data to answer a given question, and record the results.
* Answer a given question by performing an experiment, recording the results and drawing a conclusion.
* Explain when it is appropriate to use a database as a source of data.
* Gather data for a given question by using electronic media, including selecting data from databases.

Dexter wants to know what the favorite sport is for students in grade 6.

1. What is a fair question for this survey?
2. What is an example of a biased question?
3. Who would you ask this question for this survey?
4. Describe one way that you could display the results of this survey.
5. Graph collected data, and analyze the graph to solve problems.
* Determine an appropriate type of graph for displaying a set of collected data, and justify the choice of graph.
* Solve a given problem by graphing data and interpreting the resulting graph.

Statistics and Probability (Chance and Uncertainty)

4. Demonstrate an understanding of probability by:

• identifying all possible outcomes of a probability experiment

• differentiating between experimental and theoretical probability

• determining the theoretical probability of outcomes in a probability experiment

• determining the experimental probability of outcomes in a probability experiment

• comparing experimental results with the theoretical probability for an experiment.

* List the possible outcomes of a probability experiment, such as:

• tossing a coin

• rolling a die with a given number of sides

• spinning a spinner with a given number of sectors.

* Determine the theoretical probability of an outcome occurring for a given probability experiment.
* Predict the probability of a given outcome occurring for a given probability experiment by using theoretical probability.
* Conduct a probability experiment, with or without technology, and compare the experimental results with the theoretical probability.
* Explain that as the number of trials in a probability experiment increases, the experimental probability approaches theoretical probability of a particular outcome.
* Distinguish between theoretical probability and experimental probability, and explain the differences.

Dexter is rolling a six sided dice what is the theoretical probability of rolling:

1. P(5) ?
2. P(even) ?
3. P (not a 2) ?

Consider the spinner below, what is the theoretical probability of:

1. P(yellow)
2. P(green or blue)
3. P(not red)

Dexter tosses 2 coins 50 times and Dexter gets the following outcomes:

|  |  |
| --- | --- |
| Coins | frequency |
| HH | 14 |
| HT | 25 |
| TT | 11 |

What is the experimental probability of landing:

1. P(HH)
2. P (at least one H)

Consider the following spinner, based on this spinner what is the probability of spinning:

red



1. P(red)

green

yellow

1. P(blue)

blue

1. P(yellow)
2. P(not red)
3. To win you must land on red, is this a fair game? Explain.