# **Math 7 B Unit Test Guide**

## Probability Unit Test

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| **Item** | **Lesson Coverage** | **Objective** | **Lesson Page** | **Assessment Item** |
| 1 | Lesson 2: Probability Basics | Define probability as a ratio between 1 and 0 that compares favorable outcomes to all possible outcomes. | p. 1-5 | A survey taken by 150 people revealed that 65 like apple juice while 85 dislike it. One person is randomly chosen from this group. What is the chance that the chosen person dislikes apple juice? Write your answer as a ratio in simplest form.Answer: $\frac{17}{30}$ |
| 2 | Lesson 2: Probability Basics | Describe the probability of a chance event as having a greater likelihood of occurring the greater the probability is. | p. 6-11 | A letter is to be randomly picked from the word MISSISSIPPI. Which set of letters have equal chances to be selected?Answer: S and I |
| 3 | Lesson 3: Experimental Probability | Predict the approximate relative frequency given the probability of a chance event. | p. 1-7 | A six-sided number cube is rolled 30 times and lands on 3 ten times and on 5 eight times. Calculate the experimental probability of landing on a 3. Write your answer in the simplest form of a fraction.Answer: $\frac{1}{3}$ |
| 4 | Lesson 3: Experimental Probability | Explain why experimental probability will not always equal theoretical probability. | p. 8-14 | The experiment involved tossing three coins simultaneously. The experiment was carried out 100 times, and it was noted that three heads occurred 40 times. What is the difference between the experimental probability of getting three heads and its theoretical probability? Write the answer in the simplest form of fraction.Answer: $\frac{11}{40}$ |
| 5 | Lesson 4: Uniform Probability Models | Develop a uniform probability model by assigning equal probability to all outcomes. | p. 1-6 | An experiment involves picking a card from the number cards 2, 4, 6, 10. In equation form. What is the probability model for this experiment?$f\left(x\right)=$ \_\_\_\_\_, where *x* = 2, 4, 6, 10Answer: $\frac{1}{4}$ |
| 6 | Lesson 4: Uniform Probability Models | Use a uniform probability model to determine probabilities of events. | p. 7-12 | Suppose the probability of selecting a supermarket shopper who prefers plastic bags instead of paper bags is 50%. Out of 150 shoppers, how many can you expect will prefer plastic bags?Answer: 75 |
| 7 | Lesson 4: Uniform Probability Models | Use a uniform probability model to determine probabilities of events. | p. 7-12 | A spinner has 8 equally sized sections labelled as A, B, C, D, E, F, G, H. In 160 spins, how many times can you expect to spin on a consonant?\_\_\_\_\_ timesAnswer: 120 |
| 8 | Lesson 5: Probability of Chance Events | Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency. | p. 1-6 | A single coin is tossed 300 times. Heads were observed 180 times. What is the long-run relative frequency of tails? Express the answer in decimal form.Answer: 0.40 |
| 9 | Lesson 5: Probability of Chance Events | Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.  | p. 7-11 | An experiment involves picking a card from a selection of cards numbered 5, 10, and 15. In equation form, what is the probability model for this experiment? List the values of *x* in ascending order.$f(x)=$ \_\_\_\_\_, where $x=$ \_\_\_\_\_, \_\_\_\_\_\_, \_\_\_\_\_Answer: $\frac{1}{3}, 5, 10, 15$ |
| 10 | Lesson 5: Probability of Chance Events | Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.  | p. 7-11 | If the table below represents a probability model based on observed frequencies, what is the value of *x*?Answer: 0.10 |
| 11 | Lesson 5: Probability of Chance Events | For situation where a probability model is not in agreement with observed frequencies, explain possible sources of the discrepancy. | p. 12-16 | Use the table to answer the question.Bowls A and B contain a number of white and red balls. Clark repeatedly selected a ball from both bowls and recorded the results in a table. If there are 500 balls in Bowl B, what is the estimated difference in the expected number of white and red balls in Bowl B?Answer: 100 |
| 12 | Lesson 6: Compound Events | Describe the probability of a compound event as the fraction of outcomes in the sample space for which the compound event occurs. | p. 1-6 | What is the probability of rolling an odd number on the first roll of a six-sided cube and rolling an even number on the second roll?Answer: $\frac{1}{4}$ |
| 13 | Lesson 6: Compound Events | Determine the probability of a compound event. | p. 7-13 | A big flower vase has 5 begonias, 6 carnations, and 7 tulips. Two flowers are randomly selected without replacement. What is the probability of selecting two carnations? Express the answer in the simplest form of fraction.Answer: $\frac{5}{51}$ |
| 14 | Lesson 6: Compound Events | Determine the probability of a compound event. | p. 7-13 | A standard deck of 52 cards contains four suits: hearts, diamonds, clubs, and spades. Each suit has 13 cards: ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, jack, queen, and king. Two cards are randomly drawn without replacement. Calculate the probability of drawing two diamond cards. Express your answer in percent form rounding to the nearest hundredth.\_\_\_\_\_ %Answer: 5.88 |
| 15 | Lesson 2: Probability Basics | Describe the probability of a chance event as having a greater likelihood of occurring the greater the probability is. | p. 6-11 | Nicole pulls a colored marble out of a bowl, choosing the marble at random. There are 120 marbles in the bowl, of which 80 are black, 28 are white, and the rest are red. Use words and numbers to describe the probability that she will pull a red marble out of the bowl. Show your work.Answer: To find the number of red marbles, add $80+28$ to get 108, and then subtract 108 from 120.There are 12 red marbles.$12÷120=0.1$ The probability of choosing a red marble is 1 in 10, or 0.1. It is unlikely that Nicole will choose a red marble. |