Name: _____ Date: _____

Chapter 2 Test

1. A card was selected from a deck of cards and then returned. This was done 25 times and 9 spades were drawn. What is the experimental probability of not drawing spades?

A $\frac{9}{25}$ **B** $\frac{25}{9}$

C $\frac{16}{25}$ **D** $\frac{16}{25}$

2. What is the theoretical probability of drawing a black 7 from a deck of cards?

A $\frac{1}{52}$ **B** $\frac{1}{26}$

C $\frac{1}{13}$ **D** $\frac{1}{2}$

3. A coin was tossed 100 times. Heads appeared 42 times. If the number of trials were increased, you would expect the experimental probability of tossing heads to

A increase
B decrease
C stay the same
D decrease or stay the same

4. Jess hit 73 out of 124 targets at her last 5 archery meets. How many of the 42 targets would you expect her to hit at her next tournament?

A 25 **B** 42
C 56 **D** 73

For questions 5 to 7, answer true (T) or false (F).

5. A school president is randomly selected from the student council, which has 4 girls and 3 boys. The theoretical probability that the president will be a girl is greater than one half.

6. The experimental probability of an event usually approaches theoretical probability of the event as more trials are conducted.

7. Gus rolls a die 50 times. He records the number of times he rolls an even number as $\frac{23}{50}$. This value is the experimental probability.

8. A baseball player has 312 hits in 471 at bats. If the season has 110 games left, the player can expect over 70 hits.

9. Two dice are rolled 20 times and a sum of 7 is obtained 4 times. What is the experimental probability of obtaining a sum other than 7?

10. Two dice are rolled. Find the theoretical probability that

a) both numbers are greater than 2
b) one number is greater than 2
c) both numbers are the same
d) one numbers is a 6

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11. Mikka and her 2 sisters buy tickets for a raffle. A total of 50 tickets are sold. The prize is randomly drawn. What is the probability that Mikka or one of her sisters will win the prize?

12. A pop machine has 7 buttons: 3 for cola, 1 for diet cola, 1 for orange soda, and 2 for root beer. You hit a button randomly. What is the probability that you get
a) a diet soda?
b) a root beer?
c) a cola if the root beer is sold out?

13. A recent survey by a local radio station shows that 3 of 8 listeners like a new song while $\frac{1}{4}$ hate it. The rest have no strong opinion.
a) If 1600 people answered the survey, how many like the new song? dislike the new song? have no opinion?
b) Could these results apply to the entire listening audience? Explain.

14. The Heart and Stroke foundation has shown that 1 in 4 Canadians will have some form of heart disease in their lifetime. They also have shown that 1 in 2 people who have heart attacks are under the age of 65.
a) What is the probability that a person who has had a heart attack is under 65 and has or will have some form of heart disease in their lifetime?
b) What percent of people who have had a heart attack do not have or will not develop some form of heart disease in their lifetime?
c) If approximately 320 000 Canadians have had a heart attack in the past 4 years, how many were over the age of 65 and have or will develop some form of heart disease in their lifetime?
d) What assumptions must you make for your answers to be accurate?