

Hand In – Probability and Odds

Name: _____

Total Marks: _____/38

1. The probability of being born in a particular month is 1 in 12. Express this ratio as a fraction, a decimal, a percent and in words.

/2

2. Determine the probability of not being born in a particular month. Express this ratio as a fraction, a decimal, a percent and in words.

/2

3. During a Municipal election 308 voters are registered at one polling station while 272 voters were registered at a second polling station. At the first polling station 148 voters cast their ballots. At the second polling station 131 voters cast their ballots.

- a) What is the probability that voters at the first polling station cast their ballots? Express answer as a decimal.

/3

- b) What is the probability that voters at the second polling station cast their ballots? Express answer as a decimal.

- c) At which polling station were the voters more likely to cast their ballots?

4. The probability of a person being left-handed is 1 out of 10. The city of Winnipeg has a population of approximately 650 000 people.

- a) Approximately how many left-handed people live in Winnipeg?

/1

5. Canada Air offers its passengers a choice of two different types of meals on its dinner flights, vegetarian lasagna or meat lasagna. On its flights last year, approximately 18 000 out of 30 000 passengers chose the meat lasagna.

a) What is the probability that a passenger chose the meat lasagna?
(Give answer as a percent)

/2

b) Based on this probability, how many vegetarian lasagna meals should Canada Air order for a dinner flight on which there are 228 passengers booked?

6. A coin is tossed 20 times.

a) If it were to land on heads 11 times, would you believe it is a fair coin? Explain.

/3

b) If it were to land on heads 19 times, would you believe it is a fair coin? Explain.

c) If it were to land on heads 15 times, would you believe it is a fair coin? Explain.

7. Each letter of the word MATHEMATICAL is on a different card. All the cards are the same size. The cards are placed face down and shuffled.

a) Determine the probability of drawing an M.

/4

b) Determine the odds in favour of drawing an M.

c) Determine the probability of not drawing an M.

d) Determine the odds against drawing an M.

8. A 6-sided die is rolled. Find the following:

- a) The probability of rolling a number greater than 2
- b) The odds in favour of rolling a number greater than 2
- c) The probability of not rolling an even number
- d) The odds against rolling an even number

/4

9. A card is drawn from a standard deck of 52 playing cards. Find the following:

- a) The probability of drawing a diamond
- b) The odds in favour of drawing a diamond
- c) The probability of drawing an ace
- d) The odds against drawing an ace

/4

10. There are 4 white, 14 blue and 5 green marbles in a bag. A marble is selected from the bag without looking. Find the odds of selecting the following.

- a) The odds against selecting a green marble
- b) The odds in favour of not selecting a green marble
- c) The odds in favour of the marble selected being either a white or a blue marble

/3

11. In a class of 32 students, 18 students take an Art option, 10 other students take a Drama option and the rest of the students take a Choir option. One student is selected at random. Find the following:

- a) The odds in favour of the student selected taking Drama
- b) The odds against the student selected taking Choir
- c) The odds in favour of the student selected either taking Art or Choir

/3

12. Determine the probabilities of the following events occurring:

- a) The odds in favour of an event are 1:2
- b) The odds against an event are 4:1
- c) The odds in favour of an event are 99:1
- d) The odds against an event are 1:1

/4

13. The probability of a soccer game in a particular league going into overtime is 30%. Find the following:

- a) The odds in favour of a game going into overtime
- b) The odds in favour of a game not going into overtime
- c) If the teams in the league play 100 games in a season, about how many games would you expect to go into overtime?

/3