Ch 9 Data Management Collection & Display Practice Test

True/False
Indicate whether the sentence or statement is true or false.

If false, write the corrected statement in the space provided.

____ 1. Primary data refers to data you obtain from someone else.

_____

____ 2. A telephone directory is an example of a secondary data source.

_____

____ 3. A circle graph shows how each part of a data set compares to the whole.

_____

____ 4. A database is an organized collection of information, often stored electronically.

_____

____ 5. A spreadsheet is a software tool for organizing and displaying numeric data.

_____

____ 6. A spreadsheet can only be used to display data as bar graphs.

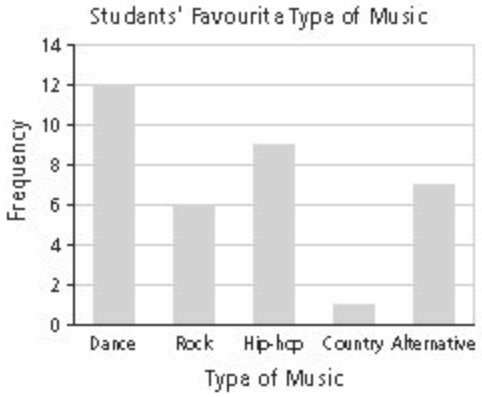
_____

Multiple Choice
Identify the letter of the choice that best completes the statement or answers the question.

____ 7. The high and low temperatures (ºC) in Toronto for a week are as follows: (23, 15), (22, 17) (29, 19), (19, 15), (21, 11), (20, 17), (21, 18). What would be an appropriate method to organize and display the data?
   a. a bar graph
   b. a stem-and-leaf plot
   c. a circle graph
   d. a spreadsheet

____ 8. What is a tally chart used for?
   a. recording experimental data
   b. showing symbols or pictures
   c. showing sections of a whole
   d. none of the above

____ 9. What fraction of the students like alternative music?



a. 15%
b. 20%
c. 25%
d. 30%

____ 10. Which of the following methods can you use to collect primary data?
a. a frequency table
b. a stem-and-leaf plot
c. a tally chart
d. all of the above

____ 11. Study the data in the following stem-and-leaf plot. Which stem contains the most data?

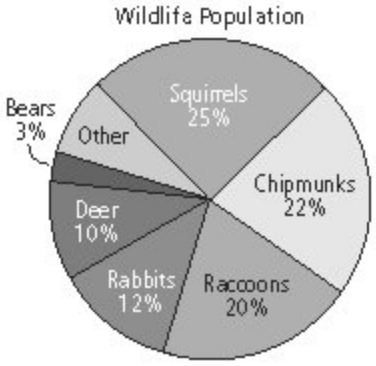
Stem (tens)	Leaf (ones)
6	3 8 9
7	5 8 9
8	3 6 7 7
9	8
	2 3 5 6

a. 6
b. 7
c. 8
d. 9

____ 12. If $\frac{4}{5}$ of a circle graph represents 80%, what percent does $\frac{2}{5}$ of a circle graph represent?
a. 16%
b. 32 %
c. 40 %
d. 45 %

____ 13. Which of the following describes the best use of a circle graph?
a. It compares parts of a set of data that add up to 50%.
b. It compares each part of a set of data to the whole set.
c. It compares the frequency of each part of a set of data.
d. None of the above.

____ 14. Karen is given this circle graph about the wildlife animals that are kept in the local zoo. She has been told that there are a total of 300 animals. What is the number of chipmunks in the zoo?



a. 44
b. 60
c. 66
d. 90

____ 15. Dave spends 3 h a day studying. If a circle graph represents one day, what is the angle measure of the section that represents his studying time?
a. 30º
b. 45º
c. 270º
d. 300º

____ 16. What type of graphs can a spreadsheet develop?
a. bar graphs
b. line graphs
c. circle graphs
d. all of the above

Completion

Complete each sentence or statement.

17. On a stem-and-leaf plot, data is organized into groups called _____.

18. A stem-and-leaf plot arranges data into groups of increasing order. For two-digit data values, the stem represents the _____ digit and the leaf represents the _____ digit.

19. To find the section angle of a part of a circle graph, express this part as a fraction, write it as a decimal, and multiply the decimal by _____ degrees.

20. A spreadsheet allows you to enter data into a computer in organized _____ and _____.

Matching

Match the correct term to each of the following descriptions.

a. primary data
b. frequency table
c. secondary data
d. pictograph
e. bar graph
f. database
g. spreadsheet
h. stem-and-leaf plot

____ 21. visually appealing, but may not represent the data precisely
____ 22. data obtained from someone else, such as in published research
____ 23. a table that shows the count for each survey choice or experimental outcome
____ 24. an organized collection of information, often stored electronically

Short Answer

Write your answer in the space provided.

25. Where would you find secondary data?

26. Draw a pictograph to show the following data.

Favourite Sport	Tally	Frequency
Golf	𝍸 𝍸	10
Hockey	𝍸 |	6
Baseball	𝍸 |||	8
Tennis	||||	4
Soccer	||	2

27. Ryan surveyed 80 people on their favourite family pet. Complete the following table to show the number of people for each response.

Favourite Pet	Percent	Number of People
Dogs	60%	
Cats	20%	
Fish	15%	
Birds	5%	

28. The stem-and-leaf plot shows the speeds of a car in km/h. Which speed occurs most often?

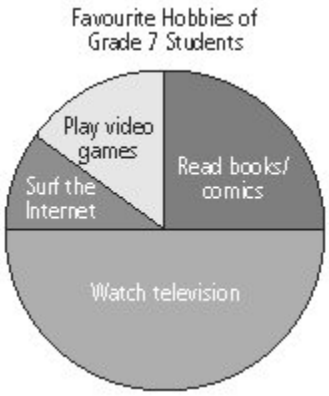
Stem (tens)	Leaf (ones)
7	0 1 4 6 7 9
8	0 3 3 4 6 6 6 7
9	8 9
	1 2 2 3 4 7 8

29. The following scores are recorded for a math test:
55 89 67 84 90 45 76 49 66 87 74 59
What number would you use for the first stem and the first leaf in your stem-and-leaf plot?

30. Kristen created a stem-and-leaf plot to show her marks for first term. Her marks were 65, 75, 75, 79, 80, and 82. Describe what error Kristen has made and how she should fix it.

Stem (tens)	Leaf (ones)
6	5 5
7	5
8	9
	0 2

31. What fraction of the circle represents students who like to watch television?



32. Which set of data is best presented as a circle graph? Explain.

Data Set A

Favourite Foods	
Pizza	50%
Hot dog	25%
Hamburger	15%
Other	10%

Data Set B

Diving Score out of 10	
Dive 1	6
Dive 2	8
Dive 3	7
Dive 4	10

33. Draw a circle graph that shows the probability of rolling an even number greater than 4 using a standard number cube.

34. One hundred MP3 downloads are recorded in the following chart. Draw a circle graph to display the data.

MP3 Downloads	
Hip Hop	55
Country	1
Soft rock	39
Pop	5

35. The data below shows the number of visitors to a fall fair by age groups. Is it more appropriate to display the data using a circle graph than a stem-and-leaf plot? Explain.

Fall Fair Visitors	
Age Group	**Number of Visitors**
Younger than 7	39

7–14	56
14–21	32
Older than 21	23

36. Why would you want to use an Internet database?

37. List three reasons why professional sports teams might want to keep a database.

38. Olla created a spreadsheet to show how many papers she delivered last week. Which cell shows how many papers she delivered on Saturday?

	A	B	C
1	Monday	23	
2	Tuesday	12	
3	Wednesday	32	
4	Thursday	29	
5	Friday	12	
6	Saturday	39	

Problem

Write your answer in the space provided.

39. Larry is making a frequency table from the data below. Complete the table, and answer the questions.

12	5	7	34	22	32	17	4	6	16
55	53	0	44	51	2	36	50	59	27
31	48	37	42	3	6	7	22	43	

a)

Range	Tally	Frequency
0–15		
16–30		
31–45		
46–60		

b) How many tally marks should go into the chart for the range 0–15?

c) Suppose the same data is used to make a frequency data table using the ranges 0–9, 10–20, 21–30, and so on up to 51–60. Which range will have the most tally marks?

40. At Mike's Movies, 20 different movies were shown for the month of August. Below are the numbers of people who attended the 20 movies.
27, 32, 37, 52, 55, 15, 16, 19, 28, 29, 40, 53, 16, 19, 28, 55, 57, 37, 34, 30

a) If you were to make a stem-and-leaf plot for the data, what numbers would you use for the stems?

b) What would be the leaves for stem number 2?

41. The Students' Council randomly selects a number of students to meet the mayor. Below is the list of students selected.

Student	Grade	Student	Grade
Warren	7	Mikaela	7
Carol	8	Jordan	9
Anna	9	Corey	7
Lacey	7	Mandy	7
Travis	7	Lucas	9
Lynn	9	Brian	7
Janet	7	Kelsey	7
Dylan	9	Jenna	9
Metan	8	Josh	8

a) Complete the frequency table to show the data.

Students	Tally	Frequency
Grade 7		
Grade 8		
Grade 9		

b) Design a circle graph to show the percent of students that are selected from each grade.

Ch 9 Data Management Collection & Display Practice Test
Answer Section

TRUE/FALSE

1. ANS: F
   Primary data refers to data you collect yourself, such as from a survey.

   DIF: Level 2 REF: Communication OBJ: Section 9.1
   STO: DMP-7m87 TOP: Data Management and Probability KEY: Primary Data
2. ANS: T DIF: Level 2 REF: Communication
   OBJ: Section 9.1 STO: DMP-7m87 TOP: Data Management and Probability
   KEY: Secondary Data
3. ANS: T DIF: Level 2 REF: Knowledge/Understanding
   OBJ: Section 9.3 STO: DMP-7m87 TOP: Data Management and Probability
   KEY: Circle Graph
4. ANS: T DIF: Level 2 REF: Knowledge/Understanding
   OBJ: Section 9.4 STO: DMP-7m87 TOP: Data Management and Probability
   KEY: Database
5. ANS: T DIF: Level 2 REF: Knowledge/Understanding
   OBJ: Section 9.5 STO: DMP-7m87 TOP: Data Management and Probability
   KEY: Spreadsheet
6. ANS: F
   A spreadsheet can be used to display data as different types of graphs.

   DIF: Level 2 REF: Knowledge/Understanding OBJ: Section 9.5
   STO: DMP-7m87 TOP: Data Management and Probability KEY: Spreadsheet

MULTIPLE CHOICE

7. ANS: A DIF: Level 3 REF: Thinking/Inquiry/Problem Solving
   OBJ: Section 9.1 STO: DMP-7m87 TOP: Data Management and Probability
   KEY: Displaying Data
8. ANS: A DIF: Level 3 REF: Communication
   OBJ: Section 9.1 STO: DMP-7m87 TOP: Data Management and Probability
   KEY: Tally Chart
9. ANS: B DIF: Level 3 REF: Thinking/Inquiry/Problem Solving
   OBJ: Section 9.1 STO: DMP-7m87 TOP: Data Management and Probability
   KEY: Bar Graph
10. ANS: D DIF: Level 3 REF: Knowledge/Understanding
    OBJ: Section 9.1 STO: DMP-7m87 TOP: Data Management and Probability
    KEY: Primary Data
11. ANS: C DIF: Level 3 REF: Application OBJ: Section 9.2
    STO: DMP-7m87 TOP: Data Management and Probability KEY: Stem-and-Leaf Plot
12. ANS: C DIF: Level 2 REF: Knowledge/Understanding
    OBJ: Section 9.3 STO: DMP-7m87 TOP: Data Management and Probability
    KEY: Circle Graph
13. ANS: B DIF: Level 3 REF: Knowledge/Understanding

OBJ: Section 9.3 STO: DMP-7m87 TOP: Data Management and Probability
KEY: Circle Graph

14. ANS: C DIF: Level 3 REF: Application OBJ: Section 9.3
STO: DMP-7m87 TOP: Data Management and Probability KEY: Circle Graph
15. ANS: B DIF: Level 4 REF: Thinking/Inquiry/Problem Solving
OBJ: Section 9.3 STO: DMP-7m87 TOP: Data Management and Probability
KEY: Circle Graph
16. ANS: D DIF: Level 3 REF: Knowledge/Understanding
OBJ: Section 9.5 STO: DMP-7m87 TOP: Data Management and Probability
KEY: Spreadsheet

COMPLETION

17. ANS: stems

DIF: Level 2 REF: Knowledge/Understanding OBJ: Section 9.2
STO: DMP-7m87 TOP: Data Management and Probability KEY: Stem-and-Leaf Plot
18. ANS: tens, ones

DIF: Level 2 REF: Knowledge/Understanding OBJ: Section 9.2
STO: DMP-7m87 TOP: Data Management and Probability KEY: Data
19. ANS: 360

DIF: Level 2 REF: Knowledge/Understanding OBJ: Section 9.3
STO: DMP-7m87 TOP: Data Management and Probability KEY: Circle Graph
20. ANS: rows, columns

DIF: Level 3 REF: Application OBJ: Section 9.5 STO: DMP-7m87
TOP: Data Management and Probability KEY: Spreadsheet

MATCHING

21. ANS: D DIF: Level 2 REF: Communication
OBJ: Section 9.1 STO: DMP-7m87 TOP: Data Management and Probability
KEY: Pictograph
22. ANS: C DIF: Level 2 REF: Communication
OBJ: Section 9.1 STO: DMP-7m87 TOP: Data Management and Probability
KEY: Secondary Data
23. ANS: B DIF: Level 2 REF: Communication
OBJ: Section 9.1 STO: DMP-7m87 TOP: Data Management and Probability
KEY: Frequency Table
24. ANS: F DIF: Level 2 REF: Communication
OBJ: Section 9.4 STO: DMP-7m87 TOP: Data Management and Probability
KEY: Database

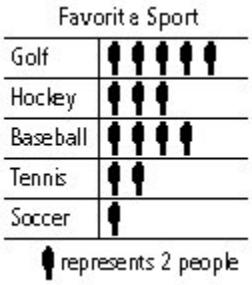
SHORT ANSWER

25. ANS:

Responses will vary. Possible sources include the Internet and the library.

DIF: Level 2 REF: Knowledge/Understanding OBJ: Section 9.1
STO: DMP-7m87 TOP: Data Management and Probability KEY: Secondary Data

26. ANS:
Pictographs will vary, but there should be one symbol and each symbol can stand for two people.



DIF: Level 2 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.1
STO: DMP-7m87 TOP: Data Management and Probability KEY: Data

27. ANS:

Favourite Pet	Percent	Number of People
Dogs	60%	48
Cats	20%	16
Fish	15%	12
Birds	5%	4

DIF: Level 3 REF: Application OBJ: Section 9.1 STO: DMP-7m87
TOP: Data Management and Probability KEY: Data

28. ANS:
The speed that occurs most often is 86 km/h.

DIF: Level 2 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.2
STO: DMP-7m87 TOP: Data Management and Probability KEY: Stem-and-Leaf Plot

29. ANS:
The first stem is 4 and the first leaf is 5.

DIF: Level 2 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.2
STO: DMP-7m87 TOP: Data Management and Probability KEY: Stem-and-Leaf Plot

30. ANS:
Kristen placed the two 75s into the wrong stem. The correct stem-and-leaf plot should be:

Stem (tens)	Leaf (ones)
6	5
7	5 5
8	9
	0 2

DIF: Level 3 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.2
STO: DMP-7m87 TOP: Data Management and Probability KEY: Stem-and-Leaf Plot

31. ANS:

Approximately $\frac{1}{2}$ of the circle represents students who like to watch television

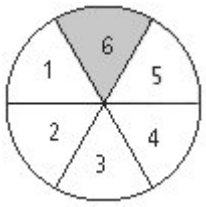
DIF: Level 1 REF: Application OBJ: Section 9.3 STO: DMP-7m87
TOP: Data Management and Probability KEY: Circle Graph

32. ANS:

Data Set A is best presented as a circle graph because all parts of a whole set of data are given.

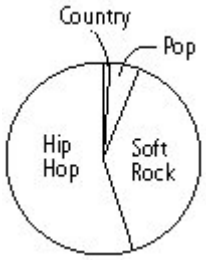
DIF: Level 3 REF: Communication OBJ: Section 9.3
STO: DMP-7m87 TOP: Data Management and Probability KEY: Circle Graph

33. ANS:



DIF: Level 3 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.3
STO: DMP-7m87 TOP: Data Management and Probability KEY: Circle Graph

34. ANS:



DIF: Level 3 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.3
STO: DMP-7m87 TOP: Data Management and Probability KEY: Circle Graph

35. ANS:

A circle graph is more appropriate. The information is not provided as individual data values so it cannot be displayed using a stem-and-leaf plot.

DIF: Level 3 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.3
STO: DMP-7m87 TOP: Data Management and Probability KEY: Stem-and-Leaf Plot, Circle Graph

36. ANS:

Responses will vary. Possible reasons include:

- doing research for a school project
- general interest

DIF: Level 2 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.4
STO: DMP-7m87 TOP: Data Management and Probability KEY: Database

37. ANS:
Answers will vary. Possible reasons include:
- keep statistics on how well each player did on each game
- keep statistics on ticket sales
- keep statistics on profits per game

DIF: Level 3 REF: Communication OBJ: Section 9.4
STO: DMP-7m87 TOP: Data Management and Probability KEY: Database

38. ANS:
B6

DIF: Level 2 REF: Knowledge/Understanding OBJ: Section 9.5
STO: DMP-7m87 TOP: Data Management and Probability KEY: Spreadsheet

PROBLEM

39. ANS:
a)

Range	Tally	Frequency
0–15	𝍸 𝍸	10
16–30	𝍸	5
31–45	𝍸 ||	8
46–60	𝍸 |	6

b) There should be 10 tally marks for the range 0–15.
c) The 0–9 range will have the most tally marks, which is 9.

DIF: Level 3 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.1
STO: DMP-7m87 TOP: Data Management and Probability KEY: Data

40. ANS:
a) The stems would have the numbers 1, 2, 3, 4, and 5.
b) The leaves for stem number 2 would be 7, 8, 8, and 9.

DIF: Level 3 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.2
STO: DMP-7m87 TOP: Data Management and Probability KEY: Stem-and-Leaf Plot

41. ANS:
a)

Students	Tally	Frequency
Grade 7	𝍸 ||||	9
Grade 8	|||	3
Grade 9	𝍸 |	6

b) The circle graph should show that:

- the percent of grade 7s is 50%, and the section angle is 180º.
- the percent of grade 8s is 17%, and the section angle is 60º.
- the percent of grade 9s is 33%, and the section angle is 120º.

DIF: Level 4 REF: Thinking/Inquiry/Problem Solving OBJ: Section 9.3
STO: DMP-7m87 TOP: Data Management and Probability KEY: Circle Graph