Unit 7 – Data Analysis Probability

Grade 8 Mathematics
Exam Review

1. Dr. Shaban measured the height of his daughter every year from her birth to age 14.
To see the trend of growth in height, which type of graph would be appropriate to display the data?

2. Raji recorded the colour of each car entering the school parking lot.
To make statements about car colours, which type of graph would be appropriate to display the data?

3. Rob and Rebecca organized a bottle recycling program in their school.
Rob recorded the number of bottles collected by each boy in his team.
Rebecca recorded the number of bottles collected by each girl in her team.
Which type of graph would be appropriate to display the data?

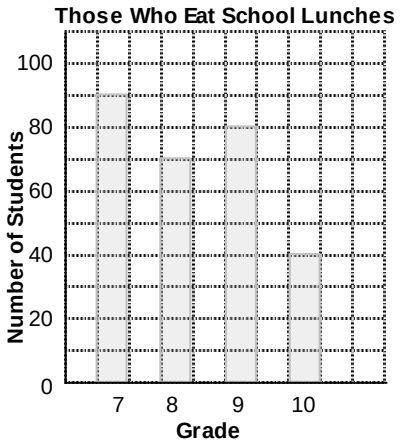
4. This table shows the number of students participating in the school recycling program over 5 years.

Year	2004	2005	2006	2007	2008
Number of Students	52	73	87	103	121

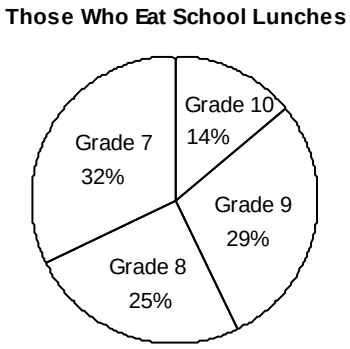
Which type of graph would you use if you want to look for a trend?

Students Who Eat School Lunches
These 4 graphs display the same data.

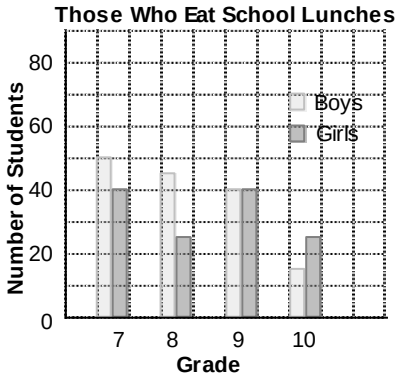
Graph A



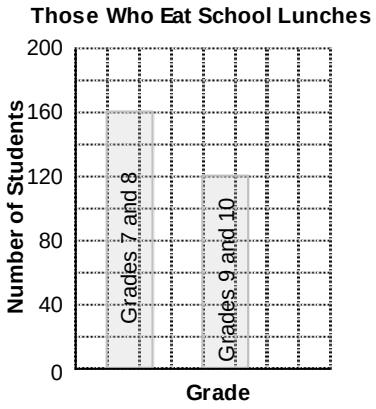
Graph B



Graph C



Graph D



5. Use the 4 School Lunch graphs above.
Which type of graph is most appropriate for finding the total number of girls who eat school lunches?

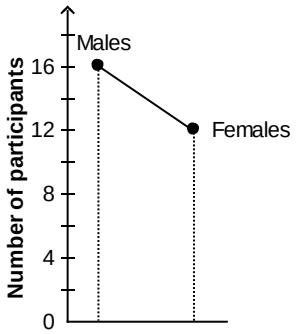
6. Use the 4 School Lunch graphs above.
Which type of graph is most appropriate for finding the number of Grade 9 students who eat school lunches?

7. Use the 4 School Lunch graphs above.
Which type of graph is most appropriate for finding the percent of Grades 8 and 9 students who eat school lunches?

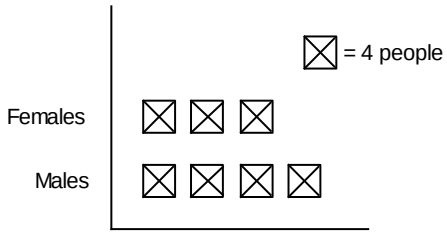
8. Use the 4 School Lunch graphs above.
Which type of graph is most appropriate for finding the total number of students who eat school lunches?

9. These graphs show the number of males and females who took part in a survey.

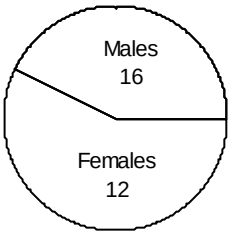
Graph A



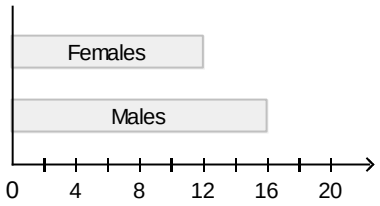
Graph B



Graph C

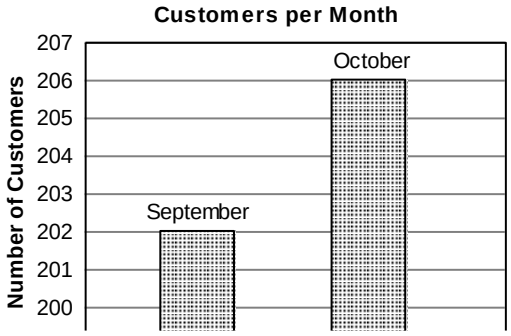


Graph D



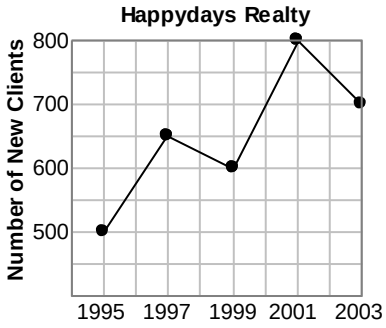
Which graph would be the most suitable way to display the data?

10. This graph shows the number of customers buying from a store in September and October.

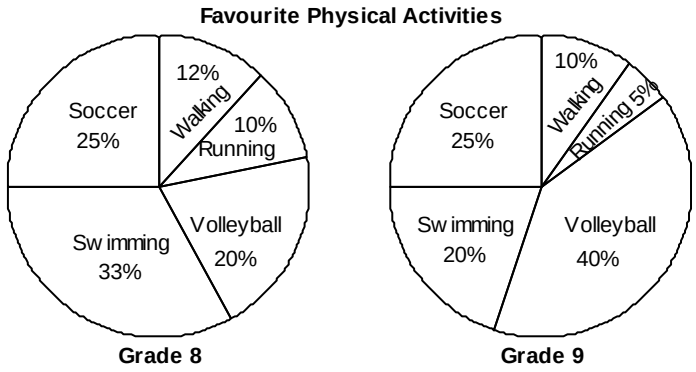


Is the graph misleading? If it is misleading, explain why.

11. Is this graph misleading? If it is misleading, explain why.



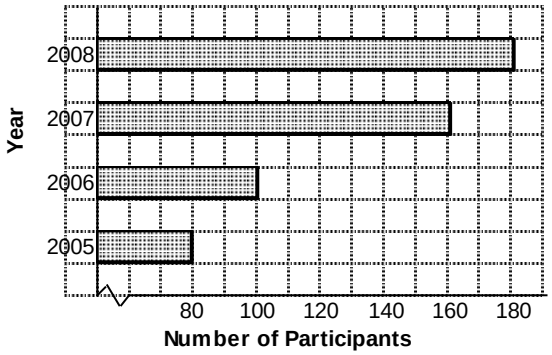
12. These 2 circle graphs show the most popular physical activities that Grade 8 and Grade 9 students participate in.



Which statement is true?

i) Equal numbers of students in Grade 8 and Grade 9 play soccer.
ii) More Grade 8 students prefer swimming.
iii) Running is the least popular activity in both grades
iv) The number of Grade 8 students who chose volleyball is the same as the number of Grade 9 students who chose swimming.

13. The graph shows the number of participants in the Fun Run.

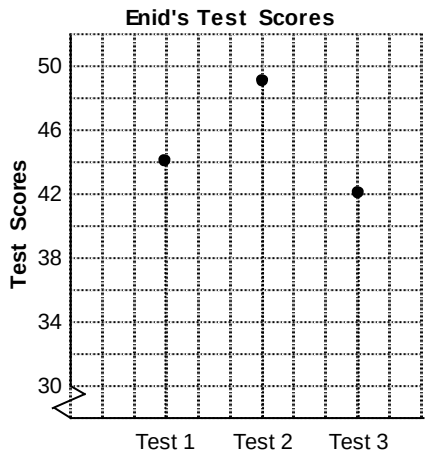


Which statement is true?

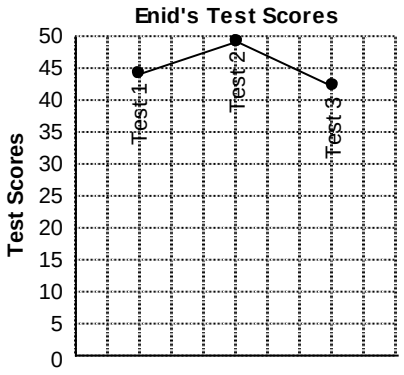
i) The number of participants doubled between 2005 and 2006.
ii) The number of participants doubled between 2005 and 2007.
iii) There was a 100% increase in the number of participants from 2005 to 2008.
iv) There was a 100% increase in the number of participants from 2006 to 2007.

14. These graphs show Enid's scores on 3 tests. In which graph are the data misrepresented?

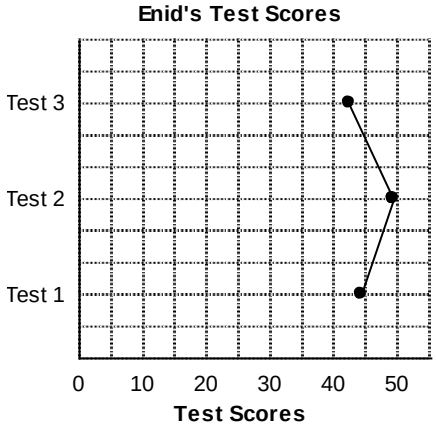
Graph A



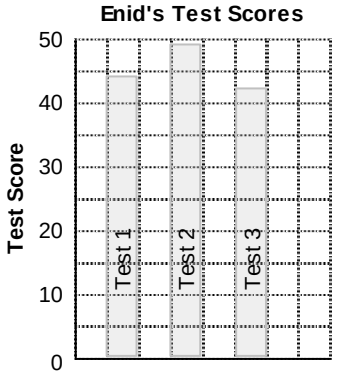
Graph B



Graph C

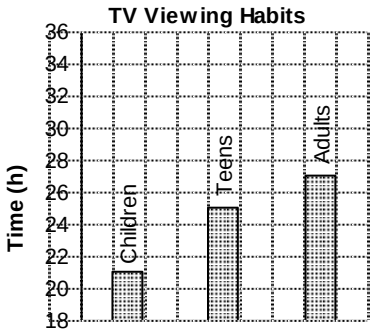


Graph D

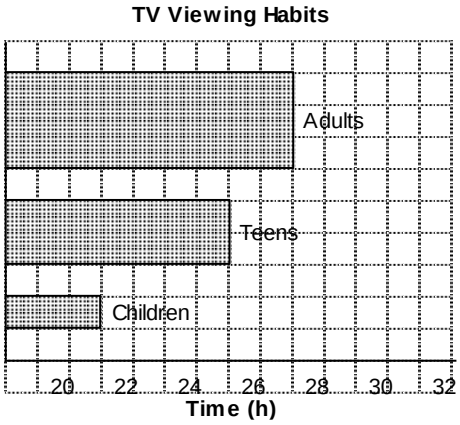


15. The graphs show TV viewing habits over a 2-week period.
Which graph does NOT give misleading information?

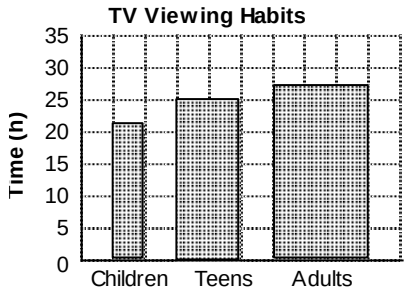
Graph A



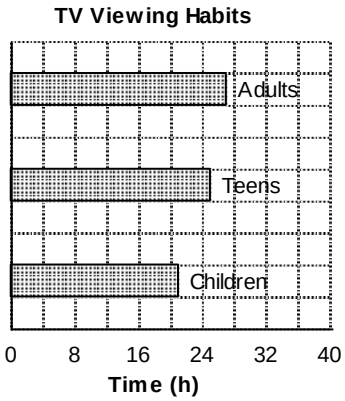
Graph B



Graph C



Graph D



16. Find the number of possible outcomes if you choose 1 of 3 kinds of fruit and 1 of 5 kinds of vegetables.

17. A clothing manufacturer offers 2 different styles of jeans, relaxed fit and regular fit, in 5 different colours. How many combinations of a style and a colour are possible?

18. A lunch menu consists of 4 sandwiches and 5 drinks.
How many possible meals with a sandwich and a drink can you order?

19. Ms. Wong is redecorating her office. She has choices of 6 colours of carpet and 4 styles of furniture.
How many possible ways can she choose a colour of carpet and a style of furniture?

20. Janelle wants to buy a shirt. Her choices of material are polyester and cotton.
Shirts are available in yellow, orange, and blue.
Make a list that shows the possible choices Janelle has.

21. Louie wants to buy either a striped shirt or a turtleneck. Both tops come in 8 colours.
Find the number of possible choices Louie has.

22. Jill wants to buy either a ball pen or an ink pen. Both pens come in 7 styles.
Find the number of possible choices Jill has.

23. A coin is tossed and a regular 6-sided die labelled 1 to 6 is rolled.
What is the probability of tossing tails and rolling a factor of 8?

24. This table shows the colours of the 4 scarves, 3 pairs of gloves, and 2 hats that Tamara has.
Tamara randomly picks a scarf, hat, and a pair of gloves.
What is the probability of Tamara choosing a pair of black gloves and a red scarf?

Scarf	Gloves	Hat
Red	Black	White
White	Brown	Red
Brown	Red	
Black		

25. A coin is tossed 4 times. What is the probability of tossing 4 tails?

26. A red die, a blue die, and a green die are rolled. Each is a regular 6-sided die labelled 1 to 6.
What is the probability of rolling an even number on each die?

27. A regular tetrahedron labelled 1 to 4 is rolled 4 times.
What is the probability of rolling a 3 each time?

28. Find the probability that 4 students chosen at random are all born on a Wednesday.

29. A red die, a blue die, and a green die are rolled. Each is a regular 6-sided die labelled 1 to 6.
What is the probability of rolling a 1 on the red die, a 2 on the blue die, and a 4 on the green die?

30. A three letter code is made using the letters *a, b, c, d, e*. Each letter may be used more than once.
How many different codes are possible?

31. A combination lock has 4 dials, each with the digits 2, 3, 4, and 5.
What is the probability that someone could guess the correct combination on the first try by randomly selecting a number from 2 to 5 four times?

32. A spinner has 12 equal sectors. 4 sectors are coloured red, 3 are coloured blue, and 5 are coloured yellow. The pointer on the spinner is spun 3 times.
What is the probability of the pointer landing on red each time?

33. A spinner has 8 equal sectors. 2 sectors are coloured red, 3 are coloured blue, and 3 are coloured yellow. The pointer on the spinner is spun 3 times.
What is the probability of the pointer not landing on red all 3 times?

34. Two sets of 6 cards are each numbered 1 to 6. One card is picked at random from each set.
What is the probability of picking 2 numbers with a sum of 4?

Unit 7 - Answer Key

1. Line graph

2. Bar graph

3. Double-bar graph

4. Line graph

5. Graph C

6. Graph A

7. Graph B

8. Graph D

9. Graph B

10. Yes, the graph exaggerates the difference in the number of customers between September and October.

11. Yes, the vertical axis gives a false impression of the actual differences in the number of new clients.

12. iii

13. ii

14. Graph C

15. Graph D

16. 15

17. 10

18. 20 meals

19. 24 ways

20. Polyester, orange
Polyester, blue
Polyester, yellow
Cotton, orange
Cotton, blue
Cotton, yellow

21. 16

22. 14

23. $\frac{1}{4}$

24. $\frac{1}{12}$

25. $\frac{1}{16}$

26. $\frac{1}{8}$

27. $\frac{1}{256}$

28. $\frac{1}{2401}$

29. $\frac{1}{216}$

30. 125

31. $\frac{1}{256}$

32. $\frac{1}{27}$

33. $\frac{27}{64}$

34. $\frac{1}{12}$