COASTMETRO
ELEMENTARY MATH PROJECT

GRADE 7 PRACTICE QUESTIONS

CARTESIAN COORDINATES

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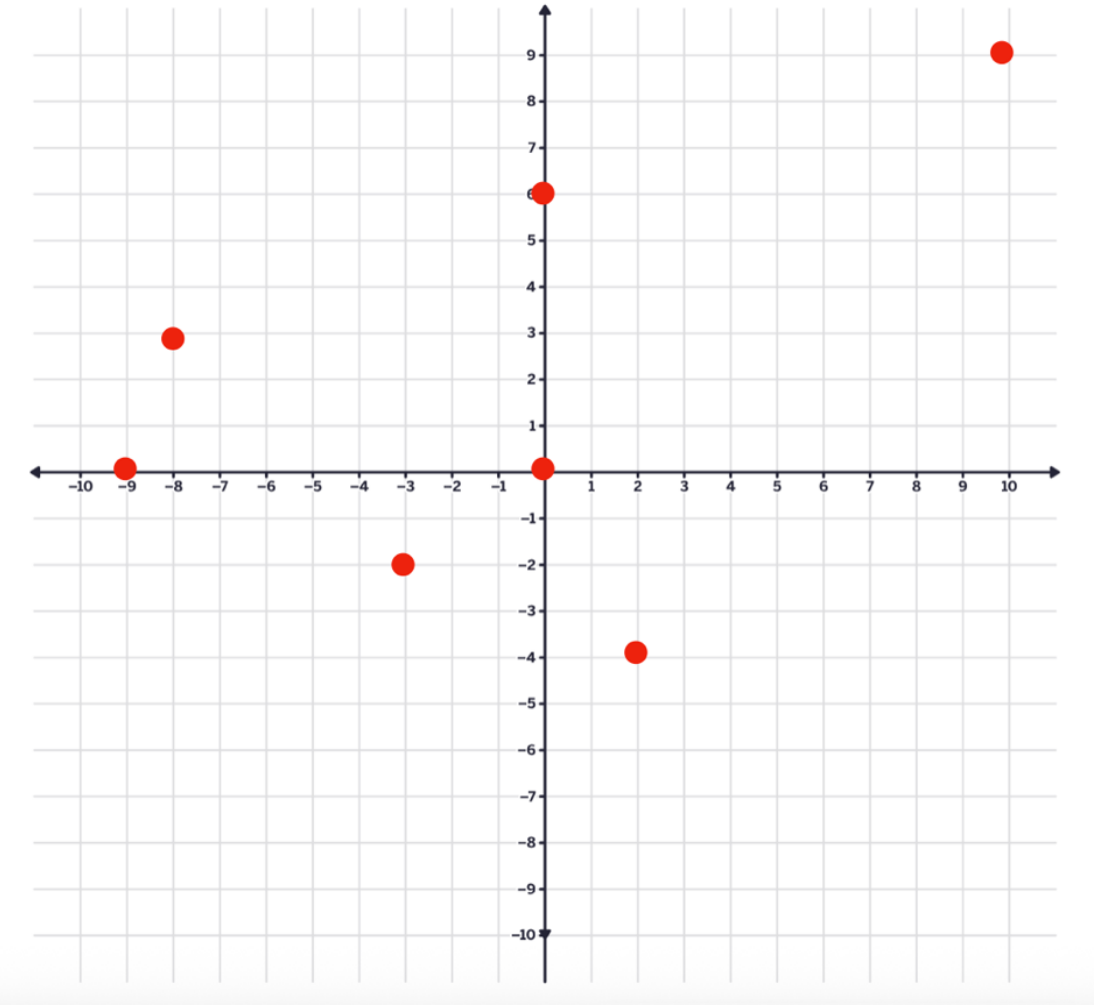
GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

1. What are the coordinates for each point on the Cartesian Plane shown? Label each ordered pair on the graph.



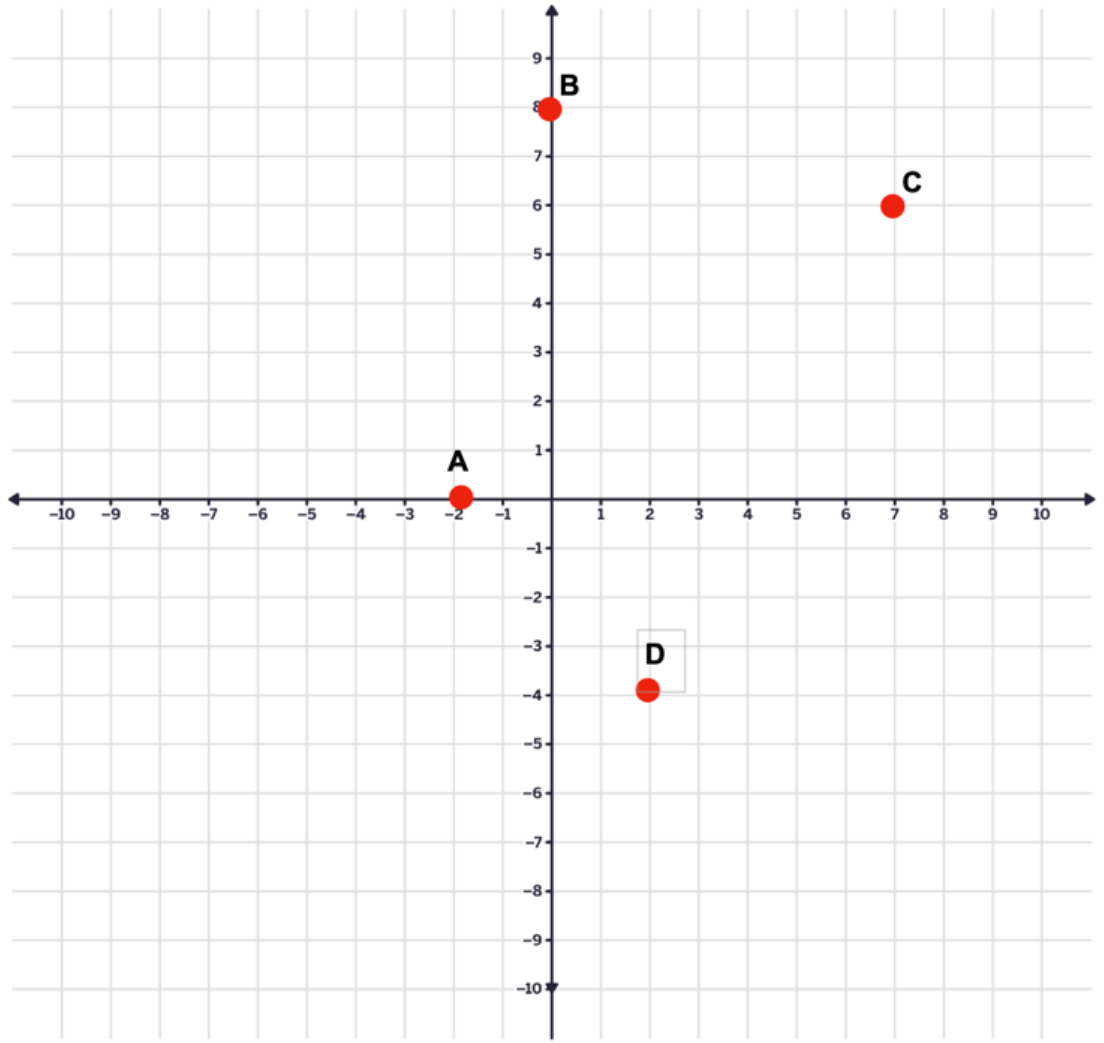
GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

2. Plot the following points (ordered pairs) on the Cartesian Plane.

a)(-3,4)
b)(0,0)
c)(-6, -5)
d)(7, 8)
e)(1,- 2)

GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

3. Which letter on the graph matches each ordered pair.
(-4 , -2)
(7, 6)
(0 , 8)
(-2 , 0)



GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

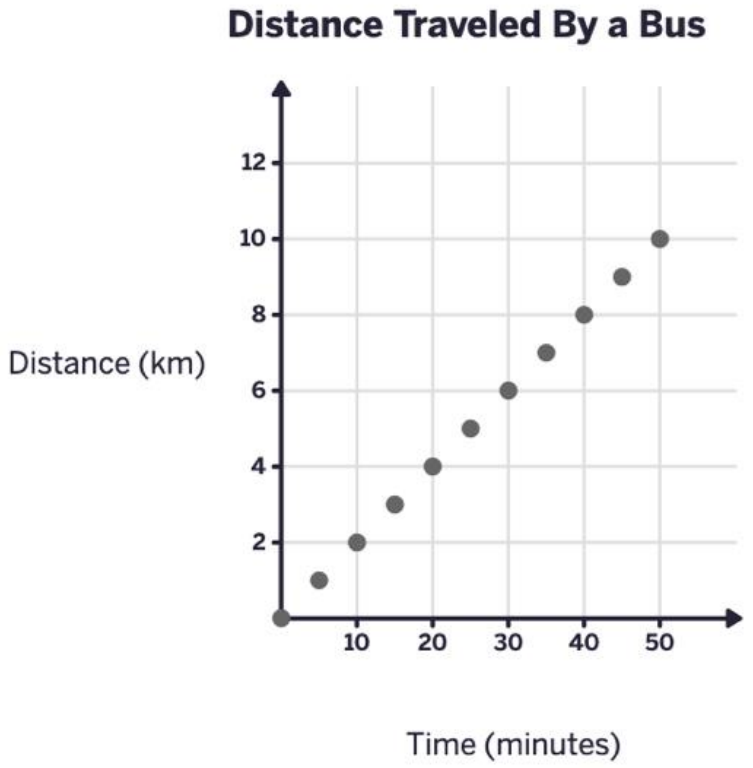
4. Predict in which quadrant each of the following points will lie. Then plot them on the Cartesian plane. Were your predictions correct?

a)(4, 3) Quadrant _____
b)(-5, 2) Quadrant _____
c)(-3, -4) Quadrant _____
d)(6, -1) Quadrant _____
e)(0, 5) Quadrant _____
f) (-7, 0) Quadrant _____

GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

5.

Time (minutes)	Distance (km)
0	0
5	1
10	2
15	3
20	4
25	5
30	6
35	7
40	8
45	9
50	10



GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

5.

a) According to this graph, how long does it take the local bus to drive 3km?

b) How long did it take for the bus to complete its entire route?

c) What was the total distance travelled during the bus's trip?

d) In which quadrant of the Cartesian Plan is the graph? Why?

GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

6. A taxi company charges $3.50 to start the ride and 1.25 for every kilometer travelled.
Complete the table of values showing the total cost for these distances:

DISTANCE (km)	COST ($)
0	
2	
4	
6	

GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

6.

a) Use your table to create a graph of Cost ($) on the y-axis and distance (km) on the x-axis.

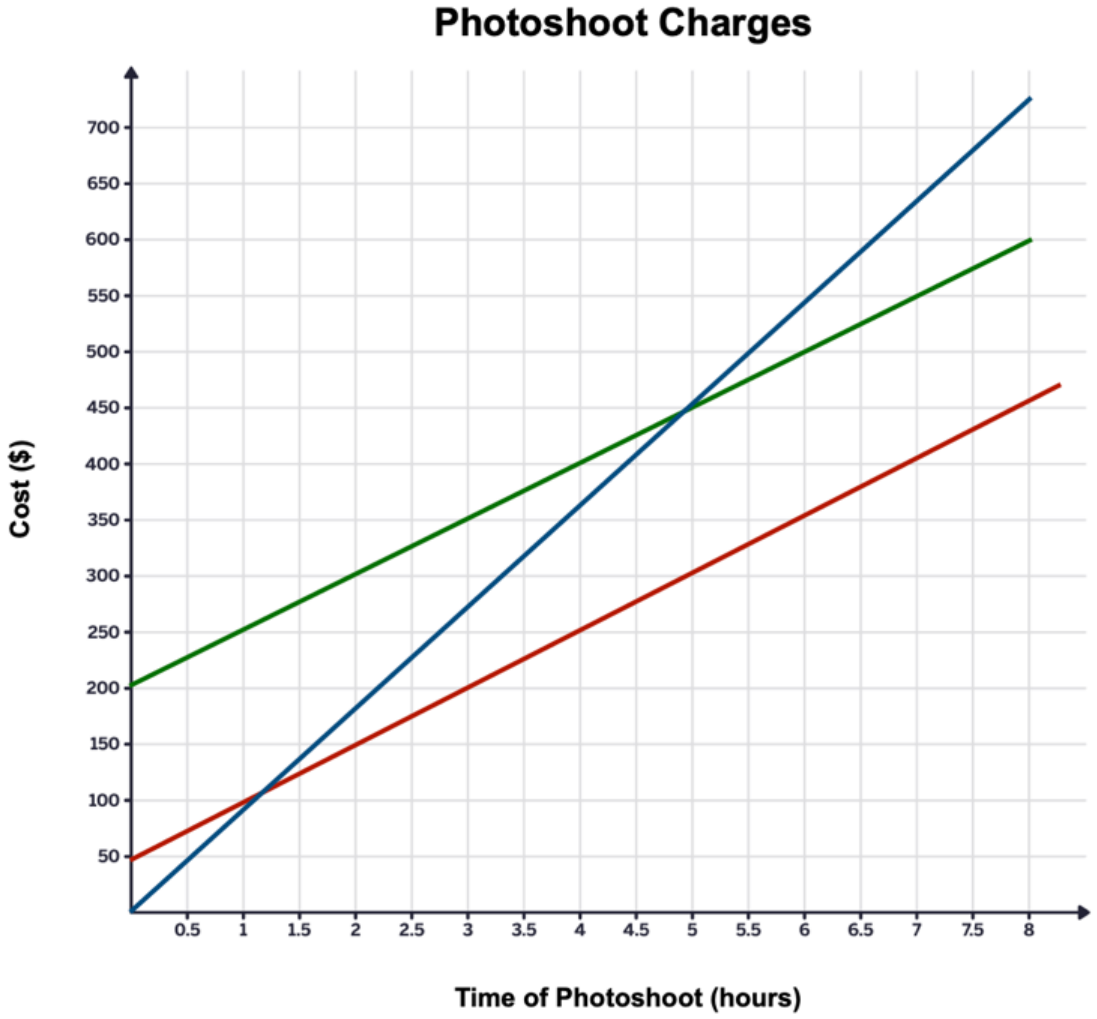
b) Draw a straight line through the points.

c) What is cost for 5km?

d) At what distance does the cost reach $10?

GRADE 7 CARTESIAN COORDINATES:
CLOSED QUESTIONS

7. Which line in the graph best describes the relationship of a photographer charging $50 per hour for a photo session plus an additional $200 for editing and printing costs?



GRADE 7 CARTESIAN COORDINATES:
OPEN QUESTIONS

8. Create a polygon with vertices on the Cartesian Plane. Label the vertices with capital letters and identify their ordered pairs.

GRADE 7 CARTESIAN COORDINATES:
OPEN QUESTIONS

9. Dosaj has a bank account with $250 in it. He has a paper route job and deposits $50 of his earnings into his account at the end of every month.

a) Create a table of values that represents how much money is in Dosaj's account each month for a year.
b) Draw a graph that represents this data.
c) Use the graph to tell how long it will take Dosaj to have $400 in his account.
d) Predict how long it will take Dosaj to have $1000 in his account, if he doesn't spend any money.

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GRADE 7 PRACTICE QUESTIONS

CIRCLE GRAPHS

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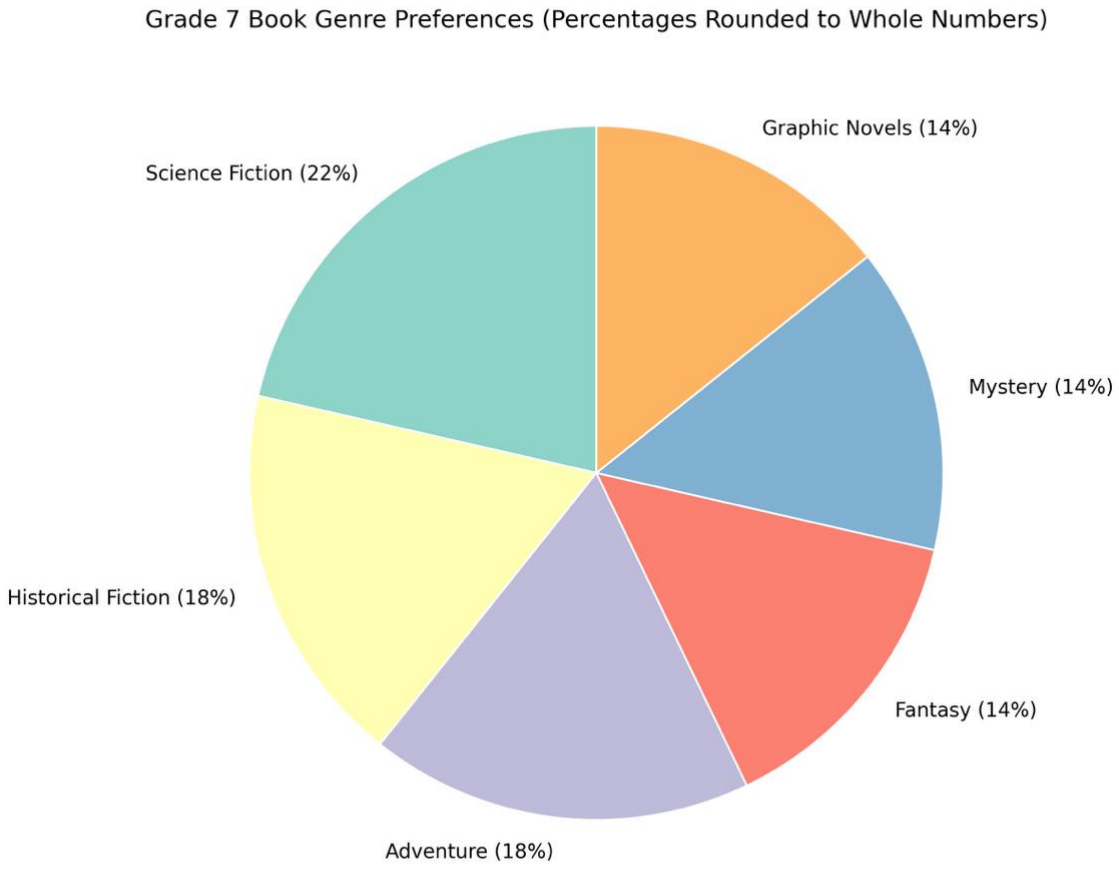
ELEMENTARY MATH PROJECT

GRADE 7 CIRCLES:

CIRCLE GRAPHS

1.



GRADE 7 CIRCLES:
CIRCLE GRAPHS

1. The circle graph shows the types of books (genres) students in a grade 7 class prefer to read.

a) What genre of books does most students enjoy reading? Show your thinking.

b) What genre of books does students enjoy the least? How do you know?

c) If there are 28 students in the class, how many students prefer to read adventure books? Show your thinking.

d) How many more students prefer to read science fiction books than fantasy books? Show your thinking.

GRADE 7 CIRCLES:
CIRCLE GRAPHS

2. The data in the chart represents the number of hours a student spends doing specific activities each week.

a) Calculate the percentage of total time this student spends doing each activity every week. Record the percentages in the chart below.

Activity	Hours in a Week	Percent of Total
weight training	1.5	
swimming	2	
robotics club	15	
television and movies	8	
student council	2	
reading	1	
playing piano	1.5	
video games	9	

2b) On the circle graph, write the percent value for each activity inside or next to its sector. Create a legend on the side that shows the colour used for each activity. Make sure every slice is labeled so it shows what the activity is and the portion of the circle it represents, as a percent value. Also, create a title for this circle graph that describes what the graph shows!

GRADE 7 CIRCLES:
CIRCLE GRAPHS

3. All the grade 7s were surveyed to determine their favourite flavour of ice cream.

Favourite Ice Cream Flavour	**Number of Students**	**Percent of Total**	**Decimal Value Equivalent**	**Central Angle** (decimal value equivalent x 360°)
vanilla	40			
chocolate	20			
strawberry	12			
other	8			
TOTALS	80	100	1.0	360

3. Complete the chart.

a) Create a circle graph to represent the data. Use either a protractor, a percent wheel, or technology. Be sure to label the circle with percent values and create a legend on the side of the graph to show what the colours of the graph represent. Also, include a title for your graph!

b) How many more students prefer vanilla than chocolate?

c) If we added 10 more students to this grade, and the same proportions stayed the same, how many would prefer chocolate?

d) If an ice cream truck could only stock two flavours, which should they choose? Explain your choice using data.

e) What could the data suggest about students' taste preferences overall? Support your answer using the data.

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ELEMENTARY MATH PROJECT

GRADE 7 PRACTICE QUESTIONS

EXPERIMENTAL PROBABILITY

GRADE 7 EXPERIMENTAL PROBABILITY:
CLOSED QUESTIONS

1. Sofia flipped two coins and recorded whether she got heads or tails. She did this 20 times and her results were:
(HH), (HT), (TH), (TT), (HT), (HH), (TH), (HT), (TT), (HH), (HT), (TH), (HT), (HH), (TT), (HT), (HH), (TH), (HT), (TT).

What was the experimental probability that Sofia got two heads?

GRADE 7 EXPERIMENTAL PROBABILITY:
CLOSED QUESTIONS

2. Ethan drew two cards from a shuffled deck (with replacement) 20 times and recorded the suits in a table.
His results were:
♥♣, ♦♠, ♥♥, ♠♠, ♦♥, ♥♦, ♣♣, ♥♠, ♦♦, ♥♥, ♠♥, ♦♣, ♥♣, ♠♠, ♦♥, ♥♦, ♣♠, ♥♥, ♦♠, ♥♣.
What was the experimental probability that Ethan drew two hearts?

GRADE 7 EXPERIMENTAL PROBABILITY:
CLOSED QUESTIONS

3. Leo spun two spinners (each divided into 4 equal sections (orange, green, pink, blue) 15 times and recorded the results in a table: (Orange–Green), (Pink–Blue), (Blue–Blue), (Green–Orange), (Orange–Orange), (Pink–Pink), (Green–Green), (Blue–Orange), (Orange–Pink), (Green–Blue), (Pink–Orange), (Blue–Green), (Orange–Orange), (Green–Pink), (Pink–Blue)
What was the experimental probability that both spinners landed on the same colour?

GRADE 7 EXPERIMENTAL PROBABILITY:
CLOSED QUESTIONS

4. Rafa drew two marbles from a bag (with replacement) 20 times. The bag had 3 red, 2 blue, and 1 green marble.
Her recorded results were: (R-B), (G-R), (R-R), (B-B), (R-G), (B-R), (R-R), (G-G), (R-B), (B-G), (R-R), (G-R), (B-B), (R-G), (R-R), (B-R), (G-G), (R-B), (B-G), (R-R).
What was the experimental probability that she drew two red marbles?

GRADE 7 EXPERIMENTAL PROBABILITY:
CLOSED QUESTIONS

5. Arjun flipped a coin and rolled a die 9 times and recorded the results in a table:
(H-3), (T-6), (H-2), (H-5,) (T-4), (H-1), (T-2), (H-6), (T-3).
What was the experimental probability that he got heads and an even number?

GRADE 7 EXPERIMENTAL PROBABILITY:
OPEN QUESTIONS

6. Flip a coin and roll a die 20 times. Record each outcome in a table. Count how many times you got HEADS and an EVEN NUMBER. Calculate the experimental probability.

GRADE 7 EXPERIMENTAL PROBABILITY:
OPEN QUESTIONS

7. Flip a coin and role a die 100 times. Record each outcome in a table. Count how many times you got HEADS and an EVEN NUMBER. Calculate the experimental probability.

GRADE 7 EXPERIMENTAL PROBABILITY:
OPEN QUESTIONS

8. Choose any two tools (dice, coins, spinners, cards, marbles) and design your own experiment with 30 trials. Record your results and calculate the experimental probability for a specific event.

GRADE 7 EXPERIMENTAL PROBABILITY:
OPEN QUESTIONS

9. Roll two ten-sided dice 100 times and record the results.
Calculate the experimental probability of rolling a sum of 11.
Calculate the theoretical probability.
How do your results compare to the theoretical probability? Why do you think this is?