

$$\frac{K}{25}$$

$$\frac{A}{22}$$

$$C$$

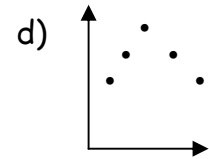
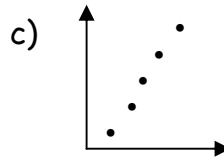
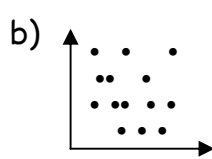
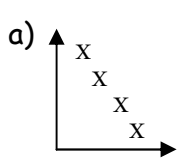
## TEST #2: GRAPHING RELATIONS

Parent's Signature \_\_\_\_\_ Name \_\_\_\_\_

### Part A: Knowledge

*Multiple Choice: Circle the letter of the correct answer. (1 mark each)*

- If 35% of a number is 70, then the number is:  
a) 24.5                      b) 200                      c) 2450                      d) 105
- The measure of central tendency that best describes the favourite dessert of the students in our class is:  
a) mode                      b) mean                      c) median                      d) range
- Which of the following does NOT describe a line of best fit:  
a) has as many points above as below the line                      b) is a straight line  
c) hits as many points as possible                      d) hits as many outliers as possible
- The scatterplot that shows a positive correlation



- The mode of the quiz scores for 9 students in our class is:  
5, 6, 7, 7, 8, 9, 9, 9, 10  
a) 9                      b) 8                      c) 7.78                      d) 7

[5]

*Full solution: provide neat complete solutions in the space provided.*

- These are Harry's golf scores:  
88    89    95    88    90    120    94

- What is Harry's mean golf score?
- Determine Harry's median golf score.

[6]

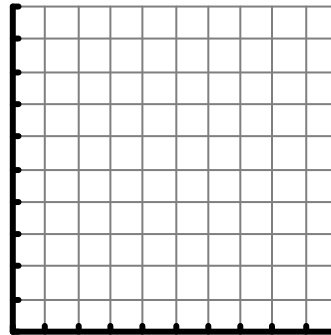
**C**

- Which of these scores best represents Harry's average. Explain.

- What golf score would Harry have to get to change the median to 93.

7. This table shows the number of successful jump shots Amber made at various distances from the basket. Draw a well labeled scatter plot and draw a line of best fit.

Distance from Basket (m)	Shots made
3	22
5	17
7	16
8	10
9	2
10	3



[3]

a) Describe the relationship between the distance Amber is away from the basket and the number of shots she makes.

[6]

b) Is this data discrete or continuous? Explain.

c) Predict how many shots Amber would make if she was  
i) 4.5 m away from the basket

ii) 12 m away from the basket

8. The table shows the wages that Liana earns for the hours that she works. Complete the first differences and answer the following questions.

C

# hours worked	Amount earned(\$)	First differences
0	0	}
1	8.50	} .....
2	17.00	} .....
3	25.50	} .....
4	34.00	} .....
5	42.50	}

a) Without graphing, determine if the relationship is linear or non-linear. Explain how you know.

[5]

b) Write a sentence equation for the relation:  
Amount Earned = \_\_\_\_\_ x # hours worked

**Part B: Application**

1. In the following situations determine if the method of collecting data was biased or not and explain your reasoning.

(C)

a) A sample of students are surveyed to determine how long it takes Dr. Denison students to travel to school each day. All 40 students on bus # 10 A were asked.

[4] b) The cafeteria staff wants to determine if they should change their menu. They survey every 3<sup>rd</sup> student who comes into the cafeteria during each period for a whole day. They will not let students take the survey more than once.

2. In the following situations determine whether the correlation would be positive, negative or have no correlation. Explain your thinking.

a) Shoe size compared to your height

[2] b) Your percentage of body fat compared to how many hours a week you exercise.

3. A skydiver jumps from an airplane. The table of values shows his motion for the free-fall part of his jump. (Before the parachute opens)

a) Calculate the first differences.

b) Does this data represent a linear or non-linear relationship? Explain.

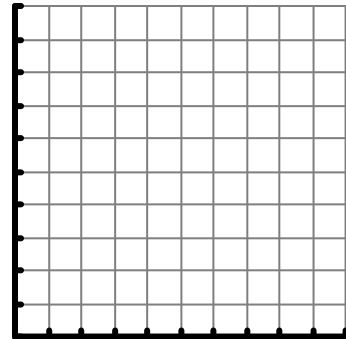
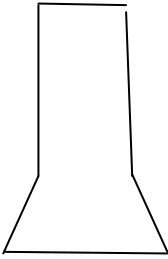
Time (s)	Distance (m)	First Difference
0	6000	}
4	5920	
8	5680	}
12	5280	
16	4720	}
20	4000	
24	3120	}

[6] c) Describe the speed of the skydiver as he is falling.

(C)

3. Water is poured into this container at a constant rate. Describe in words how the height of the water is changing over time and draw a graph that represents the situation.

C



[3]

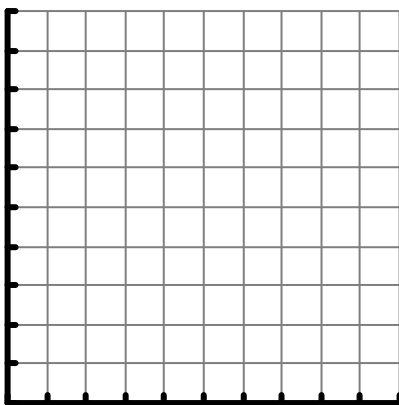
4. A baseball is hit straight up into the air. The table shows the height of the ball after various time intervals.

a) The independent variable is \_\_\_\_\_

The dependent variable is \_\_\_\_\_

Time (s)	Height (m)
0	1
1	26
2	41
3	46
4	41
5	26
6	1

b) Graph the relation on the grid below.



a) Does the graph represent a linear or nonlinear relation?

b) What is the maximum height the ball reaches?

c) What effect does gravity have on the ball?  
Use the graph to explain your answer.

C

[7]