UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

الإمارات العربية المتحدة
وزارة التربية والتعليم

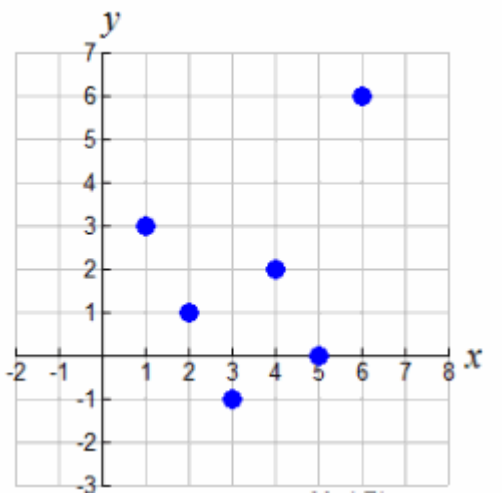
Elite Stream-Term 1

Name		**Teacher**	
Grade	**9**	**Subject**	**Mathematics**
Section		**Date**	
Assignment	**Homework 1**		
SLO Covered	**1.1.1 to 1.7.2**		

Assignment Completeness /25%	**Deadline /25%**	**Demonstrated Knowledge /50%**
Total Grade /100%		

I. **MULTIPLE CHOICE:** Please read each question carefully and circle the best answer.

1. Determine if the relation is a discrete relation or a continuous relation.
   Is the relation a function?



A. The graph shows a continuous relation, and the relation is not a function.
B. The graph shows a discrete relation, and the relation is not a function.
C. The graph shows a continuous relation, and the relation is a function.
D. The graph shows a discrete relation, and the relation is a function.

2. If $h(x) = 4x^2 - 2x + 5$, then $h(2a)$ is equivalent to _____.

   A. $4(2a)^2 - 2x + 5$

   B. $12a + 5$

   C. $16a^2 - 4a + 5$

   D. $64a^2 - 4a + 5$

3. Find the **x-intercept** and the **y-intercept** of the equation $4x - 10y = 20$.

   A. The x-intercept is 4, and the y-intercept is –10.

   B. The x-intercept is 5, and the y-intercept is 2.

   C. The x-intercept is 5, and the y-intercept is –2.

   D. The x-intercept is 4, and the y-intercept is 10.

4. The table below shows the year and the number of households in a building that had high-speed broadband internet access.

Number of Households	11	16	23	33	42	47
Year	2002	2003	2004	2005	2006	2007

   For which interval of time was the average rate of change the smallest?

   A. 2002 – 2004

   B. 2003 – 2005

   C. 2004 - 2006

   D. 2005 - 2007

5. Write the equation $3 + x = \frac{2}{7}y$ in standard form, and state the value of B.

   A. $\frac{2}{7}$

   B. –2

   C. 7

   D. –14

6. The line passing through points $(5, y)$ and $(2, -3)$ is parallel to a line with a slope of $\frac{4}{3}$. What is the value of y?

   A. 0

   B. 1

   C. –1

   D. 3

7. Fatima graphed the equation $y = x^2$ and Obaid graphed the equation $y = -3x^2$ on the same coordinate grid. What is the relationship between the graphs that Fatima and Obaid drew?

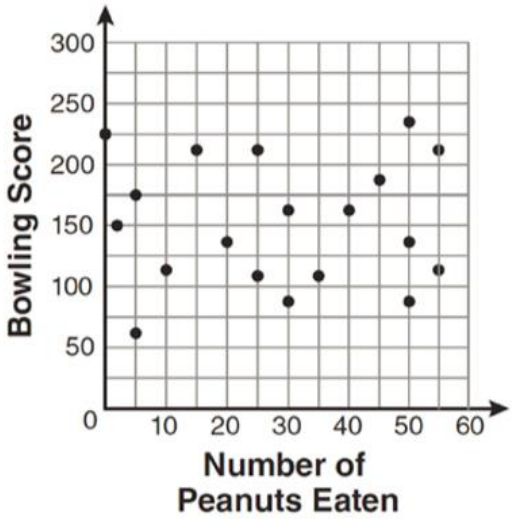
   A. Obaid's graph is wider and opens in the opposite direction from Fatima's graph.

   B. Obaid's graph is narrower and opens in the opposite direction from Fatima's graph.

   C. Obaid's graph is wider and is three units below Fatima's graph.

   D. Obaid's graph is narrower and is three units to the left of Fatima's graph.

8. The scatter plot below represents the relationship between the number of peanuts a student eats and the student's bowling score.



   Which conclusion about the scatter plot is valid?

   A. There is almost no relationship between eating peanuts and bowling score.

   B. Students who eat more peanuts have higher bowling scores.

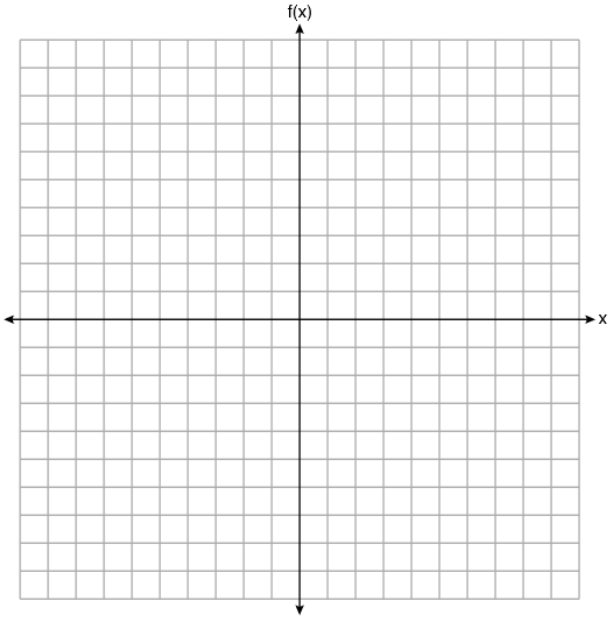
   C. Students who eat more peanuts have lower bowling scores.

   D. No bowlers eat peanuts.

II. **STRUCTURED RESPONSE:** Please show your work to receive full credit.

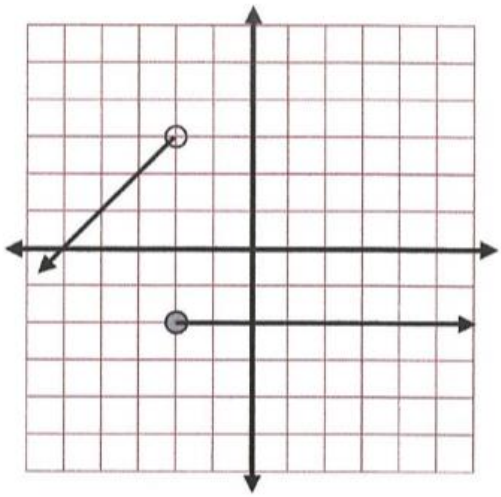
9. Carefully graph the following:

$$f(x) = \begin{cases} -2x + 6 & if\ x \leq 1 \\ x + 1 & if\ x > 1 \end{cases}$$



(2 marks)

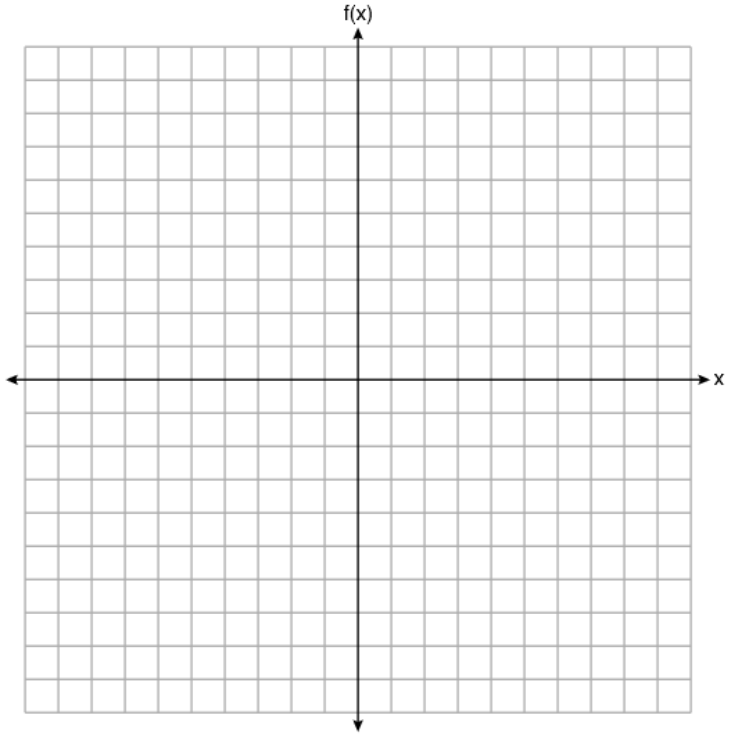
10. Write the piecewise-defined function shown below.



(3 marks)

11. On the coordinate plane below:

A. Graph $f(x) = |3x|$.

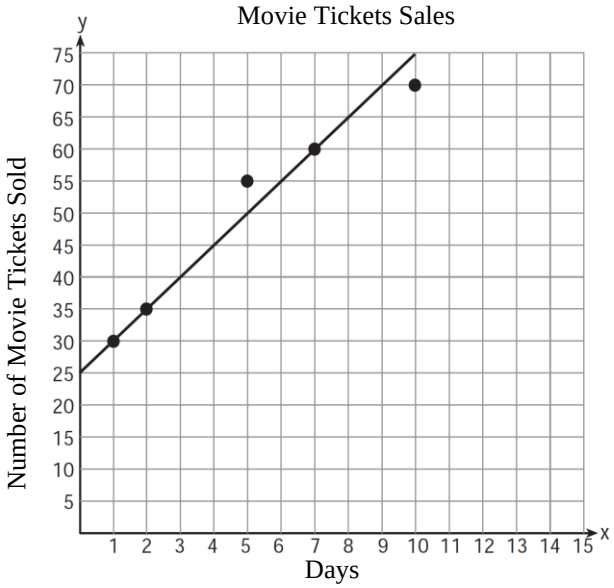


(2 marks)

B. If $g(x) = f(x) - 2$, describe how the graph of $f(x)$ is translated to form the graph of $g(x)$. (1 mark)

C. If $h(x) = f(x - 4)$, describe how the graph of $f(x)$ is translated to form the graph of $h(x)$. (1 mark)

12. The table below shows the number of movie tickets sold over a ten-day period.



A. Using the line of best fit, write an equation to represent the situation. (2 marks)

B. How many movie tickets were sold on day 15? (1 mark)