

Part I-Selected Response: 10 marks

Fill in the answers to the multiple choice questions on the sheet provided.

1) What is the x-intercept for the equation $2x + 4y + 6 = 0$?

- a) -3
- b) -2
- c) 2
- d) 3

2) What is the y-intercept for the equation $4x - 6y + 1 = 0$?

- a) $-\frac{1}{6}$
- b) $-\frac{1}{4}$
- c) $\frac{1}{4}$
- d) $\frac{1}{6}$

3) What are the x-intercepts for the equation $-3x^2 + 48 = 0$?

- a) $x = -4$
- b) $x = 4$
- c) $x = 16, x = -16$
- d) $x = 4, x = -4$

4) What is $-2x^3 + 8x^2 - 8x$ in completely factored form?

- a) $-2(x^3 - 4x^2 + 4x)$
- b) $-2x(x^2 - 4x + 4)$
- c) $-2x(x+2)(x-2)$
- d) $-2x(x-2)^2$

5) A graph produces x-intercepts of $x = 2$ and $x = -3$. Which answer below indicates the equation for that graph?

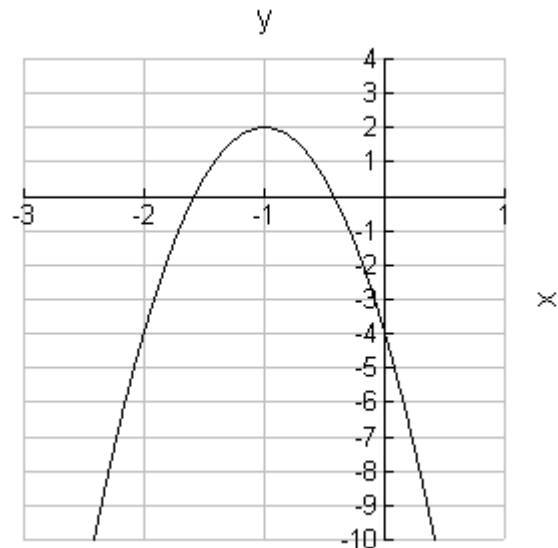
- a) $y = x^2 + x - 6$
- b) $y = x^2 + x + 6$
- c) $y = x^2 - x - 6$
- d) $y = x^2 - x + 6$

6) Solve for n: $3^n = 243$

- a) 4
- b) 5
- c) 6
- d) 81

7) What is the equation that represents the graph to the right?

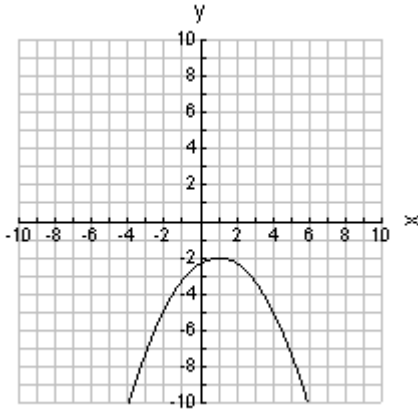
- a) $-6(y + 2) = |x - 1|$
- b) $-\frac{1}{6}(y - 2) = |x + 1|$
- c) $-\frac{1}{6}(y - 2) = (x + 1)^2$
- d) $-6(y + 2) = (x - 1)^2$



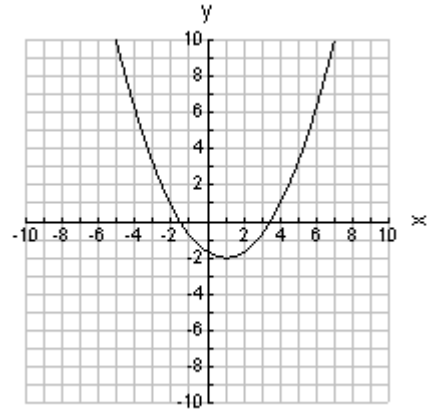
8) An absolute value function has a vertex of $(-3, 7)$, a vertical stretch of $\frac{1}{5}$ and the graph does not appear to be reflected. Which answer below would represent the equation for the function?

- a) $\frac{1}{5}(y + 7) = |x - 3|$
- b) $-5(y - 7) = |x + 3|$
- c) $5(y - 7) = |x + 3|$
- d) $5(y - 7) = (x + 3)^2$

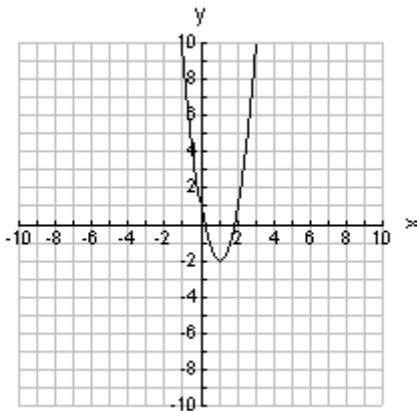
9) Which graph below best represents the equation $-3(y+2) = (x-1)^2$?



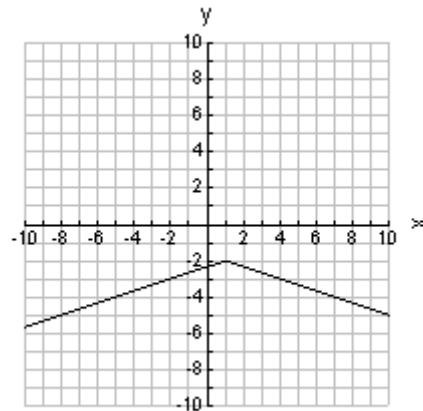
a)



b)



c)



d)

10) The graph of $y = x^2$ is transformed under the mapping notation of

$(x, y) \rightarrow \left(x - \frac{2}{5}, -\frac{4}{7}y + \frac{1}{2}\right)$. Which equation below would represent the transformed graph?

a) $-\frac{4}{7}\left(y + \frac{1}{2}\right) = \left(x - \frac{2}{5}\right)^2$

b) $-\frac{7}{4}\left(y - \frac{1}{2}\right) = \left|x + \frac{2}{5}\right|$

c) $-\frac{7}{4}\left(y - \frac{1}{2}\right) = \left(x + \frac{2}{5}\right)^2$

d) $\frac{4}{7}\left(y - \frac{1}{2}\right) = \left(x + \frac{2}{5}\right)^2$

Selected Response Answer Sheet

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

PART II: Constructed Response

Students are required to answer all questions in the space provided. All workings should be shown. Submit the answer sheet for Part I and all pages of Part II. Place your name on each page.

11) Solve the following for the indicated variable.

a) $x^2 + x = 56$ (2 marks)

b) $-3p^2 + 11p + 4 = 0$ (4 marks)

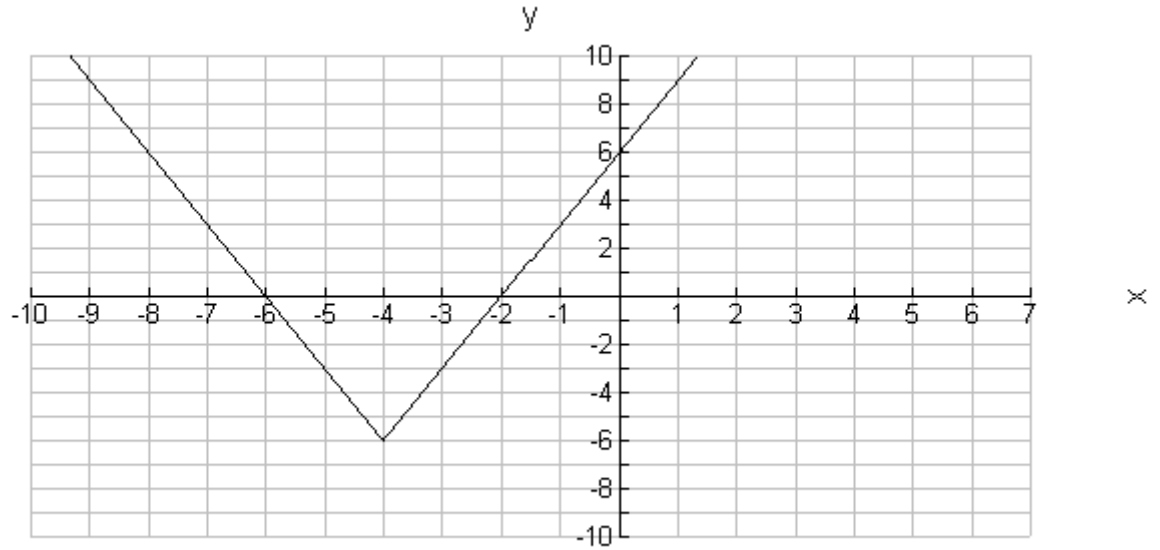
c) $-5(2^x) + 11 = -309$ (4 marks)

12) Simplify the following expressions.

a) $\frac{2x^2 + 12x + 18}{2x^2 - 18}$ (5marks)

b) $\frac{-2x^2 - 2x + 12}{x^2 + 2x - 3}$ (5marks)

13) For the following graph, fill in the information as requested. Assume it is the transformation of the graph $y = |x|$



Horizontal shift: (1 mark)

Vertical translation: (1 mark)

Vertical Stretch: (1 mark)

Reflection... Yes or No (1 mark)

Equation: (3 marks)

Mapping Notation (3 marks)

14) Complete the two tables of values, graph $y = x^2$ and $2(y+7) = (x-6)^2$ on the grid below. As well fill in the correct mapping notation as indicated below. Show all possible workings for full marks.

(3 marks)

$y = |x|$

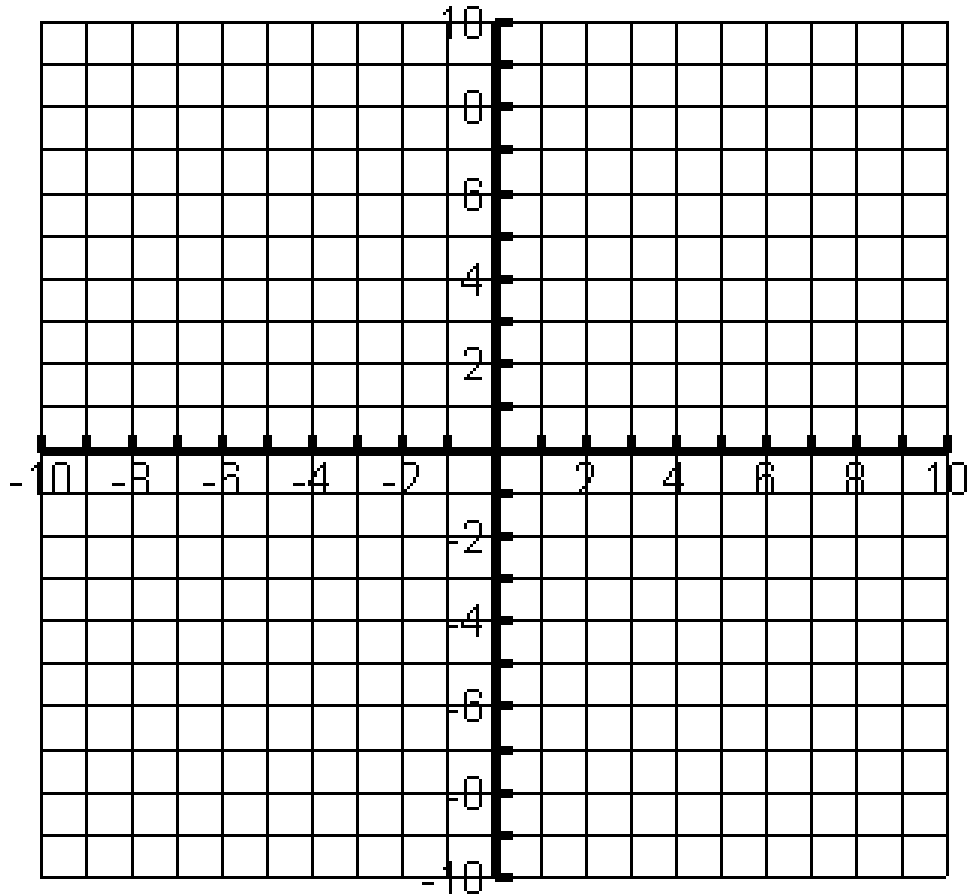
(2 marks)

x	y

$2(y+7) = (x-6)^2$

(2 marks)

x	y



Mapping Notation: _____ (3 marks)