ARABIAN PEARL GULF SCHOOL
TERM 2- IB MYP 4- MATHEMATICS (Grade 9)
S.Y. 2025-2026
UNIT – FUNCTION TRANSFORMATIONS

Name: _____   Grade Level: _____

Date: _____   Achievement Level: _____

### GRADED WORKSHEET: Criterion B. Reflection of functions.

Instructions for students

1. Attempt all the questions.
2. You are NOT allowed to use your books, notes, or any handouts during the exam.
3. Use a pencil for graphing and black or blue pen only for calculations.
4. For straight lines use a ruler and a pencil in drawing
5. Make your curves very smooth.

Achievement level	Level descriptor
0	The student **does not** reach a standard described by any of the descriptors below.
1-2	The student is able to: i. **apply, with teacher support**, mathematical problem-solving techniques to discover **simple patterns** ii. **state predictions** consistent with patterns iii. *(not demonstrated at this level)*.
3-4	The student is able to: i. **apply** mathematical problem-solving techniques to discover **simple patterns** ii. **suggest general rules** consistent with **findings** iii. *(not demonstrated at this level)*.
5-6	The student is able to: i. **select** and **apply** mathematical problem-solving techniques to discover **complex patterns** ii. **describe patterns** as general rules consistent with **findings** iii. **verify** the validity of these general rules.
7-8	The student is able to: i. **select** and **apply** mathematical problem-solving techniques to discover **complex patterns** ii. **describe patterns** as general rules consistent with **correct findings** iii. **prove**, or **verify** and **justify**, these general rules.

1. On the graphs below, sketch the reflected function $y = -f(x)$, **a reflection of the graph along the x axis**, of the given function.
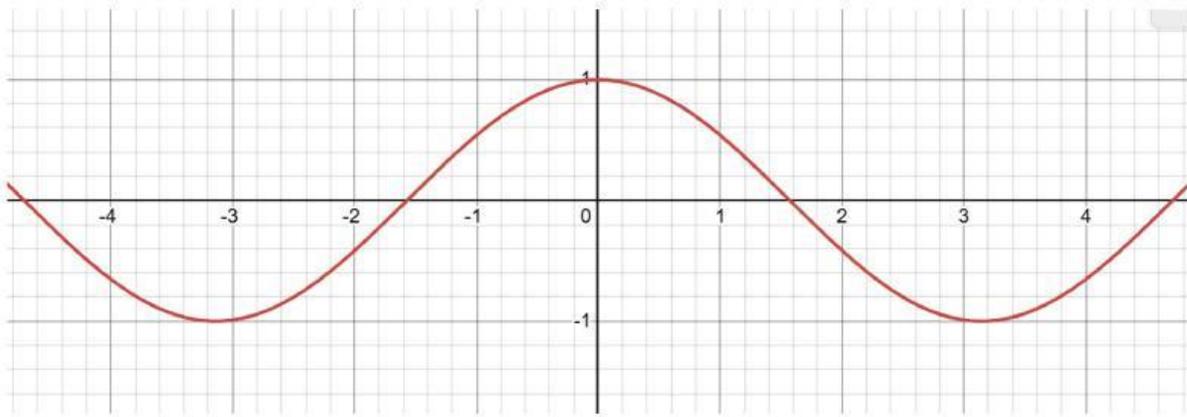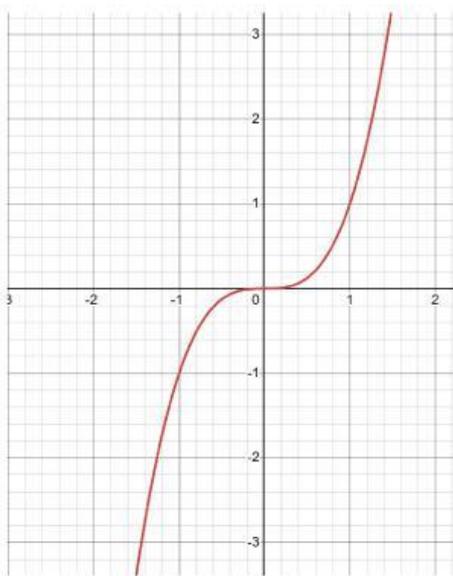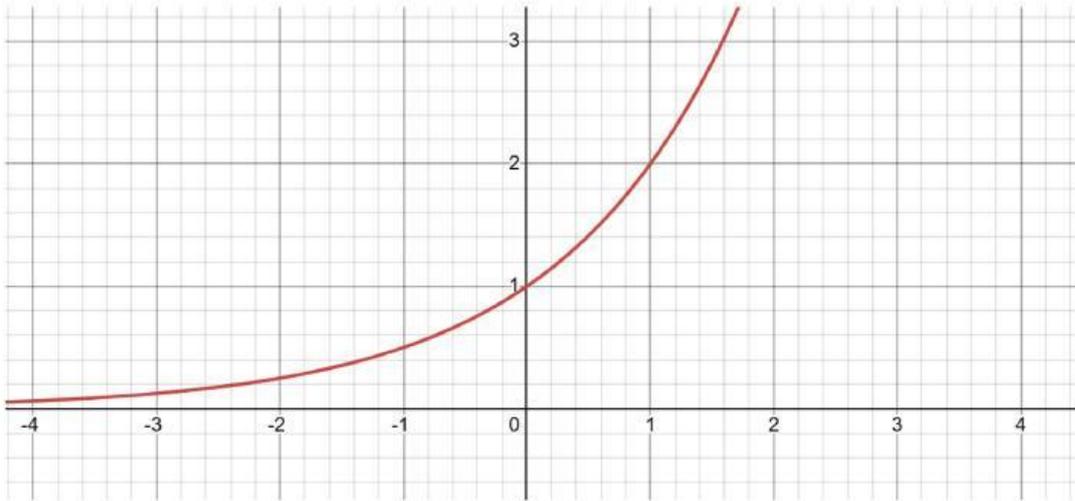
a)

b)

c)

d)
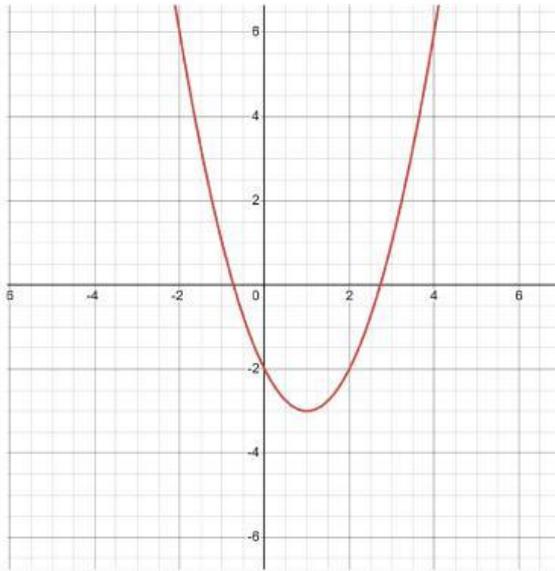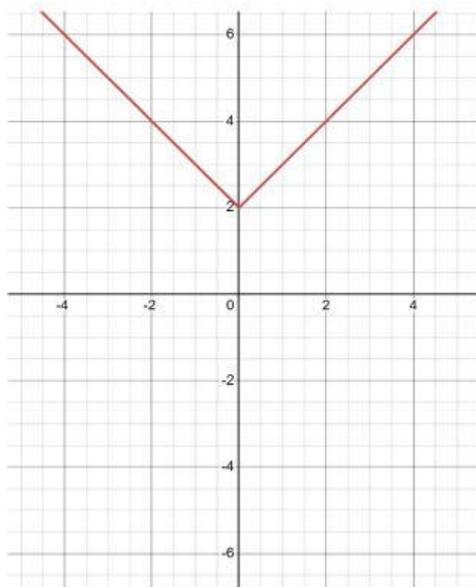
Achievement level	8	Attained level	

2. On the graphs below, sketch the reflected function $y = f(-x)$, **a reflection of the graph along the y axis**, of the given function.
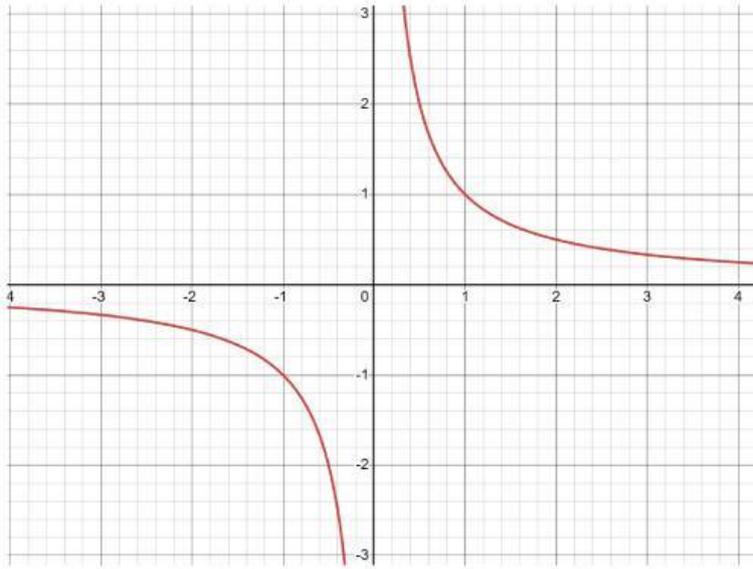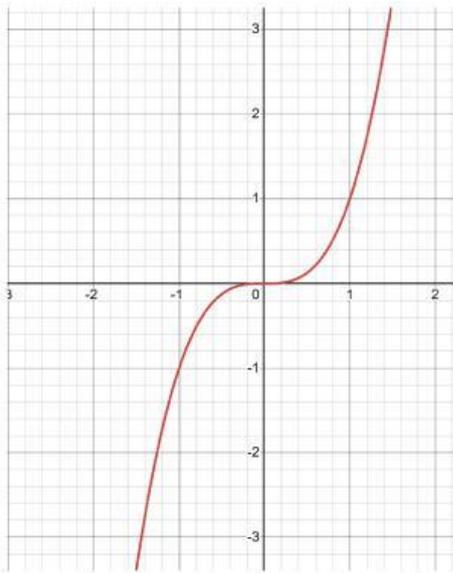
a)

b)

c)

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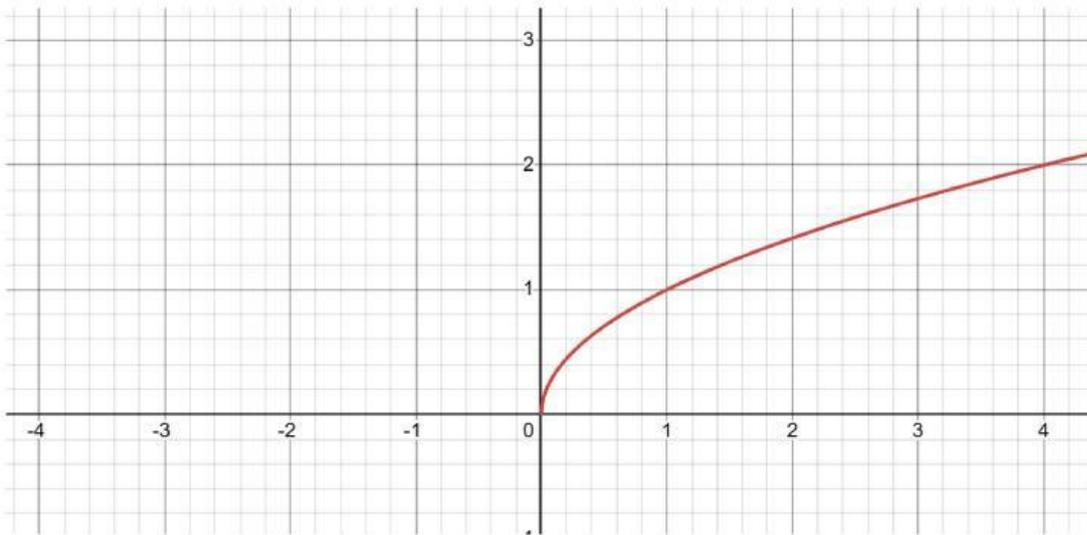
Achievement level	8	Attained level	

3. **Write down** the reflection of the following points after a reflection along the x axis (y= -f(x))
   a) $y = \sqrt{2x + 3}$.

   b) $y = 3x^2 + 9$

   c) $y = 5x - 2$

   d) $y = -x - 5$

   e) $y = (x - 2)^2 - 1$

   f) $y = (x + 5)^2 + 3$

Achievement level	8	Attained level	

4. **Write down** the reflection of the following points after a reflection along the x axis (y= -f(x))

a) $y = 5x - 6$

b) $y = 5x + 6$

c) $y = (x - 5)^2 + 9$

d) $y = (x - 3)^2 - 4$

e) $y = 3x^2 + 9x - 12$

f) $y = 2x^2 + 4$

Achievement level	8	Attained level	

7

Student's feedback

What went well…	Even better if…

Teacher's Feedback