

# SEKOLAH BUKIT SION – HIGH SCHOOL

## AY 2020-2021

### MATHEMATICS (EXTENDED) 0580

#### CHAPTER 1 TEST: FUNCTIONS

NAME: \_\_\_\_\_ CLASS: \_\_\_\_\_ DATE: \_\_\_\_\_

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#### INSTRUCTIONS:

1. Use any of the 2 methods to answer the questions in an orderly and neat manner.
  - using a file paper
  - printed test paper
2. Use **black** or **blue** pen.  
**Do not use highlighter or correction tape.**
3. Once you are done, insert the **pdf printout** on the assigned page for this Chapter Test.  
**Do not “Add work” as it becomes a different file.**  
**Your work should be found inside/within the Chapter Test page that was sent.**
4. Keep a copy of your work in your personal channel and use the pattern below as filename.

*YourNameClass\_C1FunctionsTest*

**Example:** *Emman10.4\_C1FunctionsTest*

5. Submit on-time. You only are given an extra 10 minutes after the specified time duration to scan and attach your files.

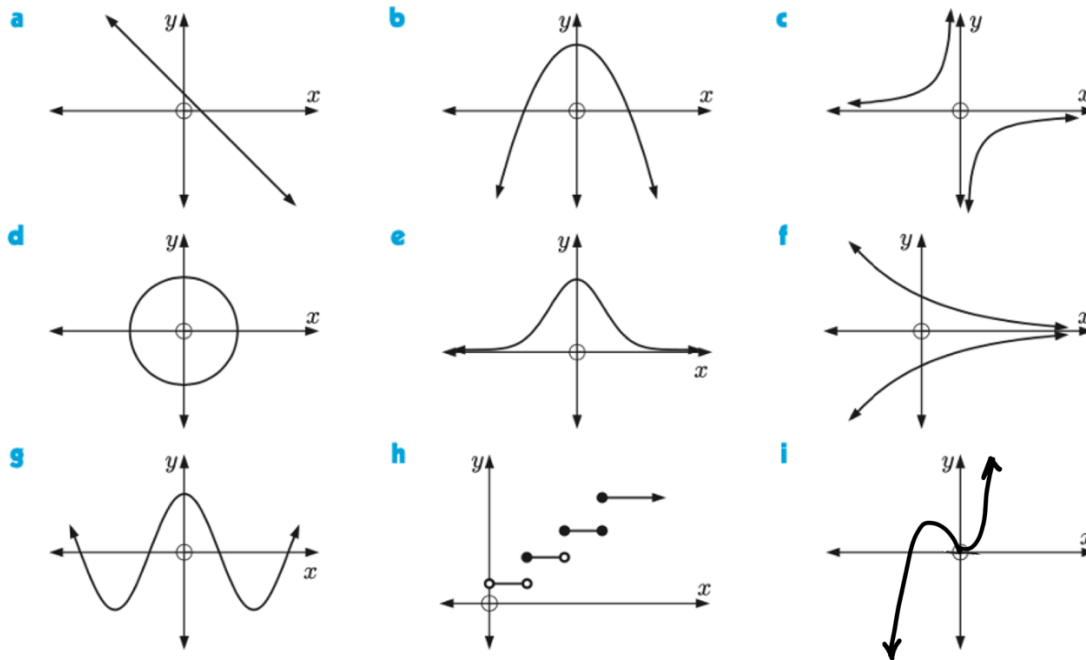
**After the closing time has elapsed, your work will NO LONGER be accepted.**

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**QUESTION 01.**

**[5]**

(a) Using a test, write down 5 letters that represent graphs of functions.



(b) Using the same images in **part (a)**, write down the letter of the graph/s that has an inverse.

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**QUESTION 02**

**[10]**

The function  $f$  is defined by  $f: x \rightarrow 6 + 4x - x^2$  for the domain  $-2 \leq x \leq 5$ .

- (a) Create a table of values of  $f$  in the given domain.
- (b) Sketch the graph of  $f$ .
- (c) Write down the range of  $f$ .
- (d) State, whether or not,  $f$  has an inverse, give a reason.

**QUESTION 03****[10]**

Solve:

**(a)**  $|3x - 7| = 5$

**(b)**  $|x^2 - 4x| = x$

**(c)**  $5 - |x - 7| = 2x$

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**QUESTION 04****[5]**

- (a) Sketch the graph of  $f(x) = |x - 4| + 5$  for  $0 \leq x \leq 6$ .  
(b) Write down the coordinates of the minimum point of  $f$ .  
(c) Write down the range of the  $f$ .

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**QUESTION 05****[10]**

The function  $f$  is defined such that  $f(x) = \frac{3x+11}{x-3}$   $x \neq 3$ .  
Another function is such that  $g(x) = \frac{x-3}{2}$ .

- (a)** Show that  $f^{-1}(x) = f(x)$ .  
**(b)** Find  $g^{-1}(x)$ .  
**(c)** Find the values of  $x$  if  $f(x) = g^{-1}(x)$ .  
**(d)** Sketch the graphs of  $g$  and  $g^{-1}$  in one cartesian plane.  
Label carefully your graphs.