

4. [11 points]

- a. [5 points] Suppose that $f(y)$ is **odd** and is **periodic** of period 8 with domain $(-\infty, \infty)$. Some of its values are given in the table below.

y	0	1	2	3	4	5	6
$f(y)$?	1.3	?	-2.9	?	?	2.2

Find the following values of f . If it is not possible to find the value specified using the information given, write NOT POSSIBLE. *You do not have to show any work for this problem.*

(i) $f(0) = \underline{\hspace{2cm} 0 \hspace{2cm}}$

(ii) $f(-1) = \underline{\hspace{2cm} -1.3 \hspace{2cm}}$

(iii) $f(2017) = \underline{\hspace{2cm} 1.3 \hspace{2cm}}$

(iv) $f(2) = \underline{\hspace{2cm} -2.2 \hspace{2cm}}$

(v) $f(4) = \underline{\hspace{2cm} 0 \hspace{2cm}}$

- b. [6 points] Suppose that $q(x) = 3e^{(x-5)^2}$ and $r(x) = e^{x^2/4}$. List the transformations you need to apply to the graph of $y = r(x)$ to transform it to that of $y = q(x)$. Fill each space with either a number or one of the phrases below, as appropriate.

SHIFT IT	SHIFT IT	SHIFT IT	SHIFT IT
HORIZONTALLY	HORIZONTALLY	VERTICALLY	VERTICALLY
TO THE RIGHT	TO THE LEFT	UPWARDS	DOWNWARDS
COMPRESS IT	STRETCH IT	COMPRESS IT	STRETCH IT
HORIZONTALLY	HORIZONTALLY	VERTICALLY	VERTICALLY

To get the graph of $y = q(x)$ starting with the graph of $y = r(x)$,

first, we SHRINK IT HORIZONTALLY by 0.5,

and then we SHIFT IT HORIZONTALLY TO THE RIGHT by 5,

and then we STRETCH IT VERTICALLY by 3.

OR

first, we SHIFT IT HORIZONTALLY TO THE RIGHT by 10,

and then we SHRINK IT HORIZONTALLY by 0.5,

and then we STRETCH IT VERTICALLY by 3.