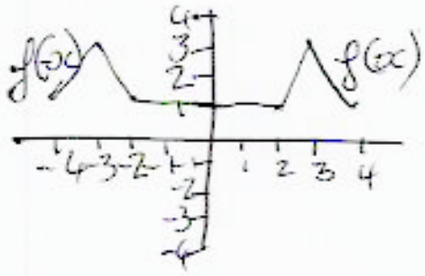
1) a) 17

b) i) $a = 10$

ii) $b = 44$

2) a)

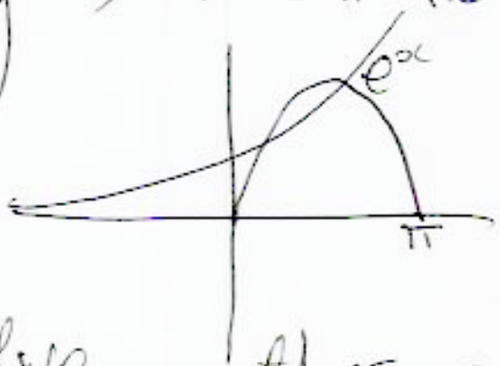


b)

Description of transformation	Diagram Letter
Horizontal Stretch SF = 1.5	C
~~$g(x) = f(x) + 1$~~	D

c) Translation by $\begin{pmatrix} -6 \\ -2 \end{pmatrix}$

3)



From the graph, there are 2 solutions. I assume you can use a graphical calculator. But I will solve another way. Solve $e^{\alpha} = 4\sin\alpha$

$\alpha = \ln(4\sin\alpha)$,

$\alpha_0 = \pi/2$

$\alpha_1 = \ln(4\sin\pi/2) = 1.386$

$\alpha_2 = \ln(4\sin 1.386) = 1.369$

$\alpha_3 = 1.365$

$\alpha_4 = 1.365$

$\alpha = \sin^{-1}\left(\frac{e^{\alpha}}{4}\right)$

$\alpha_0 = \pi/4 = 0.785$

$\alpha_1 = 0.5801$

$\alpha_2 = 0.4629$

$\alpha_3 = 0.4084$

$\alpha_4 = 0.3856$

$\alpha_5 = 0.3765$

$\alpha_6 = 0.3729$

$\alpha_7 = 0.3715$

$= 0.372$