

7. [10 points] We start with the function $f(x) = \cos x$ and perform the following transformations to its graph:

- (i) Stretch it vertically by a factor of 2.5
- (ii) Compress it horizontally by a factor of $\frac{1}{3}$
- (iii) Shift it vertically, down by 1
- (iv) Shift it horizontally right by π .

a. [4 points] Call the function represented by the new graph $g(x)$. What is a formula for this new function $g(x)$?

$$g(x) = \underline{\hspace{10em}}$$

b. [2 points] What is an equation for the midline of $g(x)$?

$$y = \underline{\hspace{10em}}$$

c. [2 points] What is the amplitude of $g(x)$?

$$\text{Amplitude: } \underline{\hspace{10em}}$$

d. [2 points] What is the period of $g(x)$?

$$\text{Period: } \underline{\hspace{10em}}$$