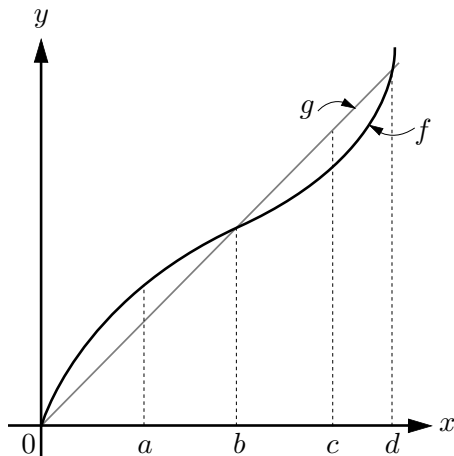


9. [10 points]

- a. [6 points] Ford and GM are two different automobile companies. It costs Ford  $f(x)$  dollars and GM  $g(x)$  dollars to produce  $x$  cars. The function  $g$  is given by the formula  $g(x) = 4000x$ , and the graphs of  $f$  and  $g$  are shown below.



Indicate if each of the following statements are true or false by circling the correct answer. No justification is required.

1. The function  $f$  is invertible on the interval  $[0, d]$ .

True                  False

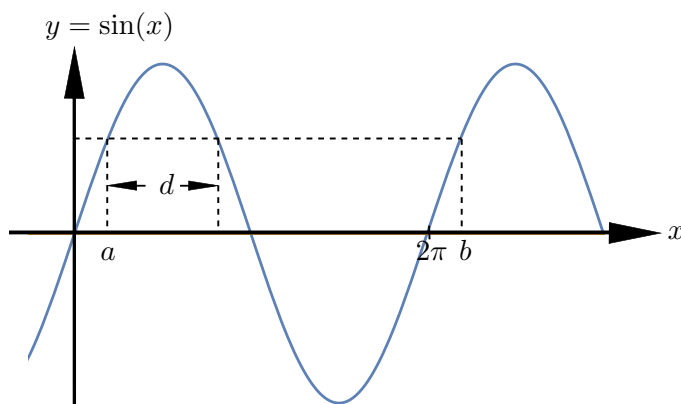
2. Suppose that GM and Ford both spend the same amount of money producing cars. Then GM will always produce more cars than Ford.

True                  False

3. The average rate of change of the cost function for Ford between 0 and  $a$  is larger than the average rate of change of the cost function for Ford between 0 and  $c$  cars.

True                  False

- b. [4 points] The graph of the function  $f(x) = \sin(x)$  is drawn below, and the dotted lines are either horizontal or vertical. Find the following quantities only in terms of  $a$ . Simplify your answer as much as possible.



1. The distance  $d =$  \_\_\_\_\_.

2.  $\sin^{-1}(\sin(b)) =$  \_\_\_\_\_.