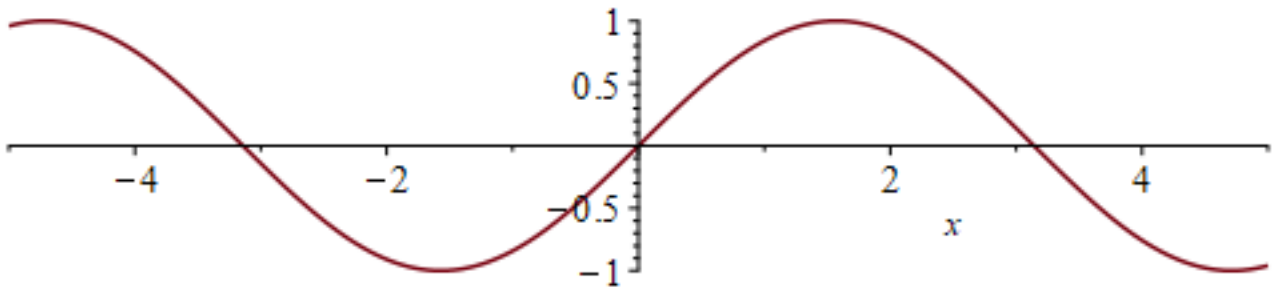


Worksheet 2  
9/30/2022

1. The graph of the function  $f(x) = \sin(x)$ ,  $x \in [-5, 5]$ , is given in a figure below.
  - (a) Sketch the graph of  $2 \sin(x)$ .
  - (b) Sketch the graph of  $-\frac{1}{2} \sin(x)$ .
  - (c) Sketch the graph of  $\sin(x - 1)$ .
  - (d) Sketch the graph of  $2 \sin(x - 1)$ .



2. Let  $f(x) = x^2 + 1$  and  $g(x) = x - 1$ . Find  $f(g(x))$  and  $g(f(x))$ .

3. Let  $F(x) = \sin^2(x^2 + 9)$ . Write  $F$  as the composition of basic functions.

4. A homeowner mows the lawn every Wednesday afternoon. Sketch a rough graph of the height of the grass as a function of time over the course of a four-week period.