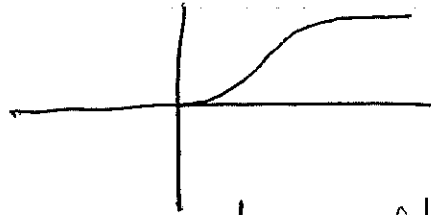


Assignment 2, MA1123, Due Mon 7th Oct.

1. Complete the graph so that $f(x)$ is
(a) an even function (b) an odd function



2. Is it ever true that $f \circ g = g \circ f$?

Investigate

3. Find a formula for f^{-1} if

$$f(x) = \frac{x+1}{x-1} \quad x \neq 1.$$

4. Express (a) $\sin(x^3)$ (b) $\sin \sqrt{x^2+1}$ as a composition of "simple" functions.

5. The temperature in Anchorage, Alaska is modelled by

$$T = 50 \sin\left(\frac{2\pi}{365}(t-101)\right) + 25$$

in $^{\circ}\text{F}$.

- (a) Sketch $0 \leq t \leq 365$

- (b) When will the coldest day be?

6. Find $\lim_{x \rightarrow 2} f(x)$ if $f(x) = 3 \quad \forall x$.

and prove your answer from the definition.

7. As in 6. with $f(x) = x^2 + 4$.