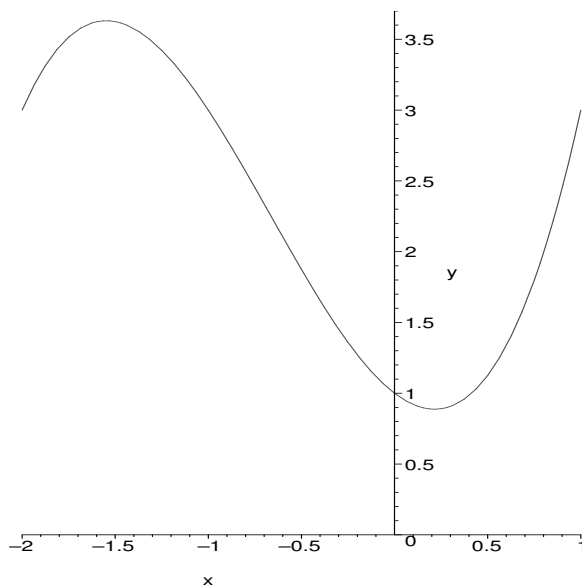


WRITE CLEARLY AND SHOW ALL YOUR WORK. YOU MAY NOT USE A CALCULATOR.

1. Here is a graph of a continuous function  $f$ :



- (a) **T F** (Average rate of change of  $f$  on  $[-1.5, 0]$ )  $>$  (Instantaneous rate of change of  $f$  at  $-1.5$ ).
- (b) **T F** (Average rate of change of  $f$  on  $[-1.5, 0]$ )  $>$  (Instantaneous rate of change of  $f$  at  $0$ ).
- (c) **T F** (Average rate of change of  $f$  from  $t = -2$  to  $t = 1$ )  $= 0$ .
- (d) **T F** The secant line from  $t = 0$  to  $t = 1$  has slope 2.
- (e) **T F** (Instantaneous rate of change of  $f$  at  $x = 0.5$ )  $= 0$ .
- (f) **T F** (Instantaneous rate of change of  $f$  at  $x = 0.5$ )  $= f'(0.5)$ .
- (g) **T F**  $\lim_{h \rightarrow 0} \frac{f(0.5+h) - f(0.5)}{h} > 0$ .
- (h) **T F**  $\lim_{h \rightarrow 0} \frac{f(0.5+h) - f(0.5)}{h} > \lim_{h \rightarrow 0} \frac{f(0+h) - f(0)}{h}$ .
- (i) **T F** There is at least one number  $c$  between  $-2$  and  $0$  such that  $f(c) = 2$ .
- (j) **T F** There is at least one number  $c$  between  $-2$  and  $1$  such that  $f'(c) = 0$ .