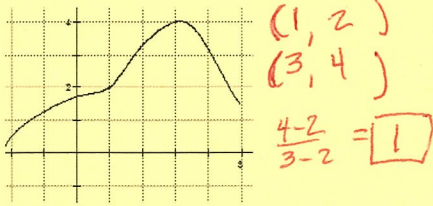


Key

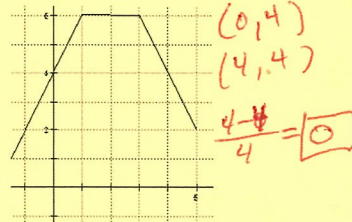
AP Calc Worksheet - Limits (1.2)

Find the average rate of change for the given function over the given interval.

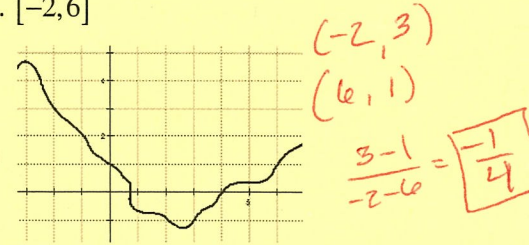
1. [1,3]



2. [0,4]



3. [-2,6]



4. [1,4]

x	-2	1	4	7
f(x)	3	2	8	4

$\frac{8-2}{4-1} = 2$  (boxed)

5. [4,16]

x	0	1	4	5	16
f(x)	-2	-4	5	6	-7

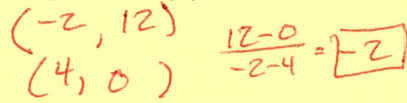
$\frac{6-5}{16-4} = \frac{1}{12}$  (boxed)

6. [-4,-2]

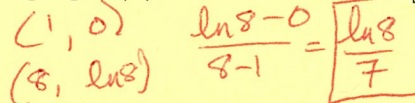
x	-4	-3	-2	0	1	8
f(x)	-4	6	2	3	0	4

$\frac{2-(-4)}{-2-(-4)} = \frac{6}{2} = 3$  (boxed)

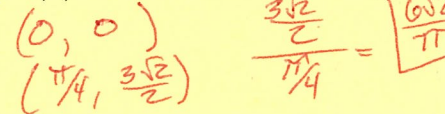
7. [-2,4];  $f(x) = x^2 - 4x$



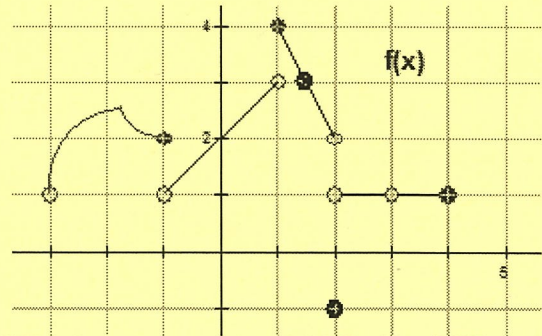
8. [1,8];  $g(x) = \ln x$



9.  $[0, \frac{\pi}{4}]$ ;  $h(x) = 3 \sin x$



Use the graph at right to find the indicated values.



10.  $\lim_{x \rightarrow -2} f(x) = 1.5$

20.  $\lim_{x \rightarrow 3^+} f(x) = 1$

11.  $\lim_{x \rightarrow 0} f(x) = 2$

21.  $\lim_{x \rightarrow 3^-} f(x) = 1$

12.  $\lim_{x \rightarrow -1^-} f(x) = 2$

22.  $\lim_{x \rightarrow 3} f(x) = 1$

13.  $\lim_{x \rightarrow -1^+} f(x) = 1$

23.  $\lim_{x \rightarrow ?} f(x) = 4$   $1^+$

14.  $\lim_{x \rightarrow 1} f(x) = \text{DNE}$

24.  $\lim_{x \rightarrow ?^+} f(x) = 2$  0 or  $\approx 2.75$  ish

15.  $\lim_{x \rightarrow 2^-} f(x) = 2$

16.  $\lim_{x \rightarrow 2} f(x) = \text{DNE}$

17.  $f(2) = -1$

18.  $f(-1) = 2$

19.  $f(3) = \text{DNE}$