Consider the function $f(x) = 2x^2 - 2$
on the interval $[1, 3/2]$.

1) Find the average rate of change of the
function over the given interval.

$$\text{AROC}: \quad \frac{f(b) - f(a)}{b - a}$$

$$\frac{f(3/2) - f(1)}{3/2 - 1} = \frac{2(3/2)^2 - 2 - (2(1)^2 - 2)}{1/2} = \boxed{5}$$

2) Find the instantaneous rate of change at the
leftmost endpoint of the given interval.

b	$\frac{f(b) - f(1)}{b - 1}$
1.1	$\frac{f(1.1) - f(1)}{1.1 - 1} = 4.2$
1.01	4.02
1.001	4.002
1.0001	4.0002

Since the values in
the right-hand column
approach 4, we say
the instantaneous rate
of change of $f(x)$ at
$x = 1$ is $\boxed{4}$.