

# The Derivative at a Point: Graphical Views

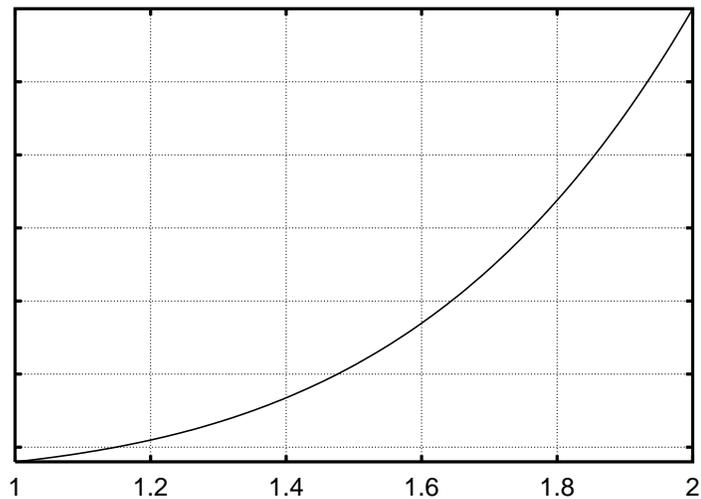


Figure 1: A function

1. Show how to represent the following lengths on Fig. 1.

(a)  $f(1.8)$

(b)  $f(1.2)$

(c)  $f(1.8) - f(1.2)$

(d)  $\frac{f(1.8) - f(1.2)}{1.8 - 1.2}$

(e)  $f'(1.2)$

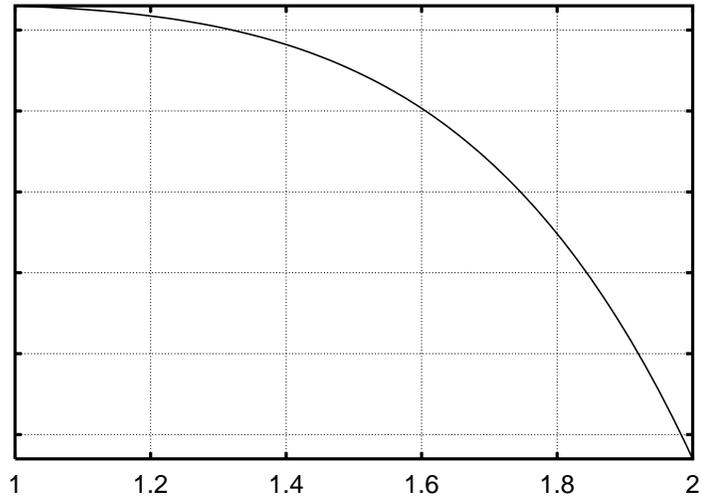


Figure 2: Another function

2. For the function in Fig. 2, determine which of the following pairs of numbers is larger. Note that the y-axis scale might be different than the x-axis scale.
- (a)  $f(1.2)$  and  $f(1.4)$
  - (b)  $f(1.4) - f(1.2)$  and  $f(1.6) - f(1.4)$
  - (c)  $\frac{f(1.4)-f(1.2)}{1.4-1.2}$  and  $\frac{f(1.6)-f(1.4)}{1.6-1.4}$
  - (d)  $f'(1.2)$  and  $f'(1.6)$