The Derivative at a Point: Graphical Views

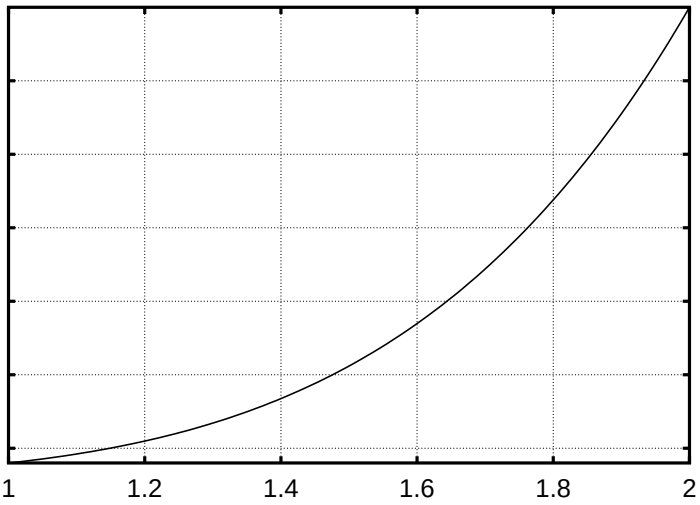

Figure 1: A function

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) $f'(1.2)$

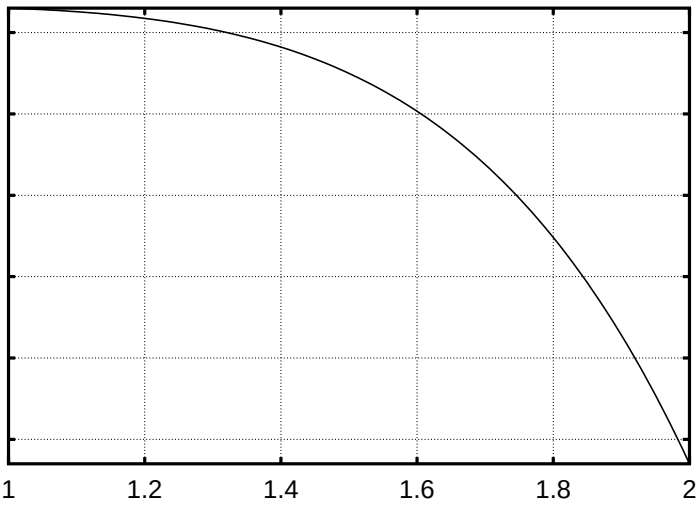

Figure 2: Another function

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 $f'(1.6)$