

MAT Exercises – Differentiation - Sol'ns

(2 pages; 2/11/22)

(1) If $f(x) = x^2$, what is $f'(3x)$?

Solution**Method 1**

Note that the differentiation is wrt $3x$ (rather than x).

Let $u = 3x$. Then $f'(3x) = f'(u) = \frac{d}{du}(u^2) = 2u = 2(3x) = 6x$

Method 2

$$f'(x) = 2x \Rightarrow f'(3x) = 2(3x) = 6x$$