1. Find the numerical differentiation

a) Forward Differentiation (1st Derivative)
b) Backward Differentiation (1st Derivative)
c) Central Differentiation (1st Derivative).

for the following function

$$y = f(x) = 7x^2 + 3x + 17$$

For $h = 0.4 \quad x_0 = 0.2$

2. Find the numerical integration using Simpson's rule for the following function

$$y = f(x) = (60 - 2x)^2 + (60 - x)\cos\left(x^{\frac{1}{2}}\right)$$

the function parameters are $a = 1, b = 3, \ M = 8$

3. Find the numerical integration using trapezoidal rule. $a = 0.6, b = 6, M = 6$

$$y = f(x) = (60 - 2x^2) + (60 - x)\cos\left(x^{\frac{1}{2}}\right)$$