TASK 3

$$f(x) = x^2 + 2\sin(x) + \cos(x)$$

SECANT METHOD:

$$X_{n+1} = X_n - f(X_n)\left(\frac{X_i - X_{i-1}}{f(x_i) - f(x_{i-1})}\right)$$

USED TWO INIT CONDITIONS X_n AND X_{n-1} (X_1) (X_0)

CHANGING TO

$X_1 = 0 \quad X_2 = -0,1$

BECAUSE OF MATLAB

TASK 4

$h = 0,04$

$f(x) = \sin(x)$

$f'(x) = \cos(x)$

DIVIDED DIFF:

$$f'(x) = \frac{f(x+h) - f(x-h)}{2h}$$

$f(x+h) = 0,9781 \qquad f(x) = 0,9857$

$f(x-h) = 0,9916$

$f'(x) = -0,1688$ $\quad Y - Y_1 = a(X - X_1)$, $Y = f\_diff \cdot (x - 1,74) + 0,9852$ } PLOT TANGENT