1. For finding a root of the function:

\[ f(x) = x^2 - 4x - 12 \]

by doing 5 steps of the modified secant method, \( x_0 = 3 \), \( \delta = 0.1 \).

Answer:

```matlab
clc; format short
f=@(x) x^2-4*x-12;
x=3; d=0.1; out=[];
for i=1:5
    slope=(f(x+d)-f(x))/d;
    out=[out;x f(x) slope];
    x=x-f(x)/slope;
end
out
x=x
```

Output:

\[
\begin{array}{ccc}
    x & f(x) & slope \\
    3.0000 & -15.0000 & 2.1000 \\
    10.1429 & 50.3061 & 16.3857 \\
    7.0727 & 9.7327 & 10.2455 \\
    6.1228 & 0.9974 & 8.3456 \\
    6.0033 & 0.0262 & 8.1066 \\
\end{array}
\]

\[ x = 6.0000 \]

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**On-line computer lab:**

1. For finding a root of the function:

\[ f(x) = \cos(\sin x) - x = 0 \]

by doing 5 steps of the modified secant method, \( x_0 = 2 \), \( \delta = 0.1 \).