1>a>

the value of f(-1/3):- (via newton's forward differences)=0.174518518518519

(on command prompt we have to write the following)

>> x=[-0.75 -0.50 -0.25 0]

x =

-0.7500 -0.5000 -0.2500 0

>> y=[-0.07181250 -0.02475000 0.33493750 1.1010]

y =

-0.071812500000000 -0.024750000000000 0.334937500000000 1.101000000000000

>>newton_fd(x,y,-1/3)

X =

0.174518518518519

the value of f(-1/3)=0.174518518518519.

1>b> (via newton's forward differences)

the value of f(0.25)= -0.132774774375000

(on command prompt we have to write the following)

>> x=[0.1 0.2 0.3 0.4]

x =

0.100000000000000 0.200000000000000 0.300000000000000 0.400000000000000

>> y=[-0.62049958 -0.28398668 0.00660095 0.24842440]

y =

-0.620499580000000 -0.283986680000000 0.006600950000000 0.248424400000000

>> newton_fd(x,y,0.25)

X =

-0.132774774375000

the value of f(0.25)=-0.132774774375000

2>a>(via newton's forward differences)
the value of f(0.05):- 1.051258798828125

(on command prompt type the following)

>> x=[0.0 0.2 0.4 0.6 0.8]

x =

Columns 1 through 4

0 0.200000000000000 0.400000000000000 0.600000000000000

Column 5

0.800000000000000

>> y=[1 1.22140 1.49182 1.82212 2.22554]

y =

Columns 1 through 4

1.000000000000000 1.221400000000000 1.491820000000000 1.822120000000000

Column 5

2.225540000000000

>> newton_fd(x,y,0.05)

X =

1.051258798828125

the value of f(0.25)= 1.051258798828125

2>b> (via newton's backward differences)
the value of f(0.65):-

(
>> newton_bd(x,y,0.65)

X =

1.915550517578125

the value of f(0.65)= 1.915550517578125