
```

% Q4

n = [-20 -19 19 20];
for i = 1:4
    fo = f1(n(i));
    ft = f2(n(i));
    fprintf('f1(%d) : %25.15e\n', n(i), fo);
    fprintf('f2(%d) : %25.15e\n', n(i), ft);
    fprintf('Diff : %25.15e\n\n', abs(fo - ft));
end

disp('Function 2 will be better (avoid overflow/underflow)')

function f = f1(n)
    x = 36; y = 1e16;
    f = (y.^n)/exp(1).^(n.*x);
end
function f = f2(n)
    x = 36; y = 1e16;
    f = (y/exp(1).^x).^n;
end

f1(-20) :      4.920646149013654e-08
f2(-20) :      4.920700930264205e-08
Diff :      5.478125055142845e-13

f1(-19) :      1.141367814854855e-07
f2(-19) :      1.141367814854855e-07
Diff :      1.323488980084844e-23

f1(19) :      8.761417546430180e+06
f2(19) :      8.761417546430182e+06
Diff :      1.862645149230957e-09

f1(20) :      NaN
f2(20) :      2.032230802424132e+07
Diff :      NaN

Function 2 will be better (avoid overflow/underflow)

```

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