

CTA200H

Assignment 2

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1. Q1?

(1 Mark)

```
ana_error = special.erf(ana)
plt.loglog(h, num_error)
plt.loglog(h, ana_error)
plt.show()
```

```
Ans: h = np.arange(1.e-3, 1, 0.1)
def inif(function, x0, h): result = (function(x0 + h) - function(x0))/h
return result
print(inif(np.sin, 0.1, h))
def fin(function, x0, h): result = (function(x0 + h) - function(x0 - h))/2*h
return result
print(fin(np.sin, 0.1,h))
num = abs(fin(np.sin, 0.1, h) - inif(np.sin, 0.1, h))/inif(np.sin, 0.1, h)
ana = abs(inif(np.sin, 0.1, h) - fin(np.sin, 0.1, h))/fin(np.sin, 0.1, h)
num_error = special.erf(num)
```

2. Q2?

(a) Part. a

(b) Hint: These can be nested further

(2 Marks)

```
Ans: A2.
```

```
(a) Ans. for (a)
```

```
(b) Solution for (b)
```

3. Q3?

(Type anything here)

Ans: A3.