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Problem 1

```
format long e
% fl(1+e)  =  1,                  e < machine eps
% fl(4000 (1 + e) ) = 4000,       e < machine eps
% fl(4000 + 4000e) = 4000,        e < machine eps
% fl( 4000 + a) = 4000,           a < 4000*machine eps
```

Checking the answer

checking whith different value

```
x2 = 4000 + 4000*eps  % equal value
x3 = 4000 + 4000*eps*10  %greater value of a
x4 = 4000 + 4000*eps*0.1  % smaller value of a
```

```
x2 =

     4.000000000000001e+03


x3 =

     4.000000000000009e+03


x4 =

        4000
```

Conclusion

Therefore the value of a should be less than 4000*machine eplision

```
disp('a should be less than approxval where,'); approxval = 4000*eps
```

```
a should be less than approxval where,

approxval =

     8.881784197001252e-13
```

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