8.

a. Python | VsCode

```python
import numpy as np

def quiz34rv(m):
    answers = np.random.uniform(0,4,m)
    for sample in answers:
        print(sample)

def quiz34rvCD(m):
    answers = np.random.uniform(0,4,m)
    return np.sum(answers>1.5)/m



print("="*100)
print("B")
quiz34rv(25)
print("="*100)
c = []
d = []
for i in range(5):
    c.append(quiz34rvCD(100))
    d.append(quiz34rvCD(1000))

print (sum(c)/5)
print(sum(d)/5)
```

b.

3.296858174783281

1.4903174430089052

3.8243091952165114

1.455234569210524

2.1550064570730934

3.046144118740919

0.7168298860359239

1.5765879040287576

3.3582419399384356

3.6022429851768227

2.1553175513211285

3.901960971528462

1.8097055212937505

2.890381667893659

1.6405626218360494

3.7371241268742614

1.6475215945989352

3.6972451380596887

0.6162992112426187

1.4028005218835733

2.5216684717078963

2.220882574597482

0.7109866676965932

3.2338142840368986

1.5780887900815115

c.

[0.62, 0.6, 0.66, 0.66, 0.6]

Average = 0.628

Theoretical = 5/8 = .62

Average > Theoretical

D.

[0.636, 0.639, 0.637, 0.601, 0.645]

0.6315999999999999

Average > theoretical

e.

The theoretical may not be obtained no matter how many times you run an experiment.