

Adapt the code and run it (in the language of your choice). Fill in the table. Show all theoretical calculations. Attach actual simulation code and output.

```

100 INPUT n
200 FOR i = 1 TO 1000
300 FOR j = 1 TO n

generate X

400 S = S + X
500 NEXT j
600 IF (S/n > 0.45) AND (S/n < 0.55) THEN c = c + 1
700 S = 0
800 NEXT i
900 PRINT c/1000
    
```

$$P(0.45 < \bar{X}(n) < 0.55)$$

<b>X</b>	<i>n</i> = 1		<i>n</i> = 25		<i>n</i> = 100	
	theory (exact)	simulation	theory (CLT)	simulation	theory (CLT)	simulation
<i>X</i> ~ <i>U</i> (0,1)						
<i>X</i> ~ <i>exp</i> (2)						
<i>P</i> ( <i>X</i> = 0.2) = 0.8 <i>P</i> ( <i>X</i> = 1.7) = 0.2						