Q5 Task-3

Bound = B = 750.

n = ?

confidence level = .95

We know, $B = t \times \frac{s}{\sqrt{n}}$

$$\sqrt{n} = \frac{ts}{B}$$

$$n = \frac{t^2 s^2}{B^2}$$

Substituting the values from Python program

$$n = \frac{(2.01)^2 \times (11387.57)^2}{(750)^2}$$

$n = 931$ → 931 samples are needed

Task 4

$n = 420$

$CL = .95$.

$$B = t \times \frac{s}{\sqrt{n}}$$

From the Python program for Q5 → Task 4,

$$B = 1.96 \times \frac{11525.17}{\sqrt{420}}$$

$B = 1102.25$

∴ With 420 samples, the best bound possible is 1102.25.