

A) What is n.

14.4% $\rightarrow$ seropositive

Total no. of people = 100

20% of 100 $\rightarrow$ seropositive.

If 100 $\rightarrow$ 105%
? $\leftarrow$ 20%

$$\frac{100 \times 20}{100} = 20$$

seropositive = 20.

$$tn = a + (n-1)d.$$

$$100 = 14.4 + (n-1) 5.6.$$

$$85.6 = 5.6n - 5.6$$

$$91.2 = 5.6n$$

$$n = 16 \frac{2}{7}.$$

B). What is P (a.c/p)

$$p\text{-value} = \frac{100}{100 + 16 \frac{2}{7}}$$

$$P = \underline{\underline{0.86}}$$

c) What is the q ? (2 dp).

The seropositives	probability $P(x)$
0	0.056
5	0.15
10	0.1
15	0.05
20	0.2

$$P(0) \text{ or } P(5) \text{ or } P(10) \text{ or } P(15) \text{ or } P(20) = 0.556$$

$$P \geq 0.556$$

d) What is the expected value for 100 seropositive cases?

Solution.

	Total no.	EBV $\frac{\sum nx}{n}$ %
Total covid 19 seropositive	20	22 (75.86%)
Covid - seropositive with O1H	16	2 (50%)
covid seropositive without O1H	4	16 (76.19%)
Volunteers.	9	5 (55.56%)

E) Variance For 100 Seropositive cases.

Solution

Total no of outcomes = 100

The Seropositive cases = 20

$$\text{Variance} = \frac{(20 - 100)^2}{20 - 1}$$

$$\sigma^2 = 336.84,$$