NUMERICALS BASED ON REJECTION REGION AND P-VALUE (Z-TEST)

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REJECTION REGION

Ho = Housing inflation is 10%

Ha = Housing inflation is more than 10%

Let alpha = 5% = 0.05

Zc = z-critical = 1.645 (based on 0.95 cumulative probability - z table)

Zs = z-sample

Let sample mean = 11

Let standard deviation = 4

Let sample size = 100

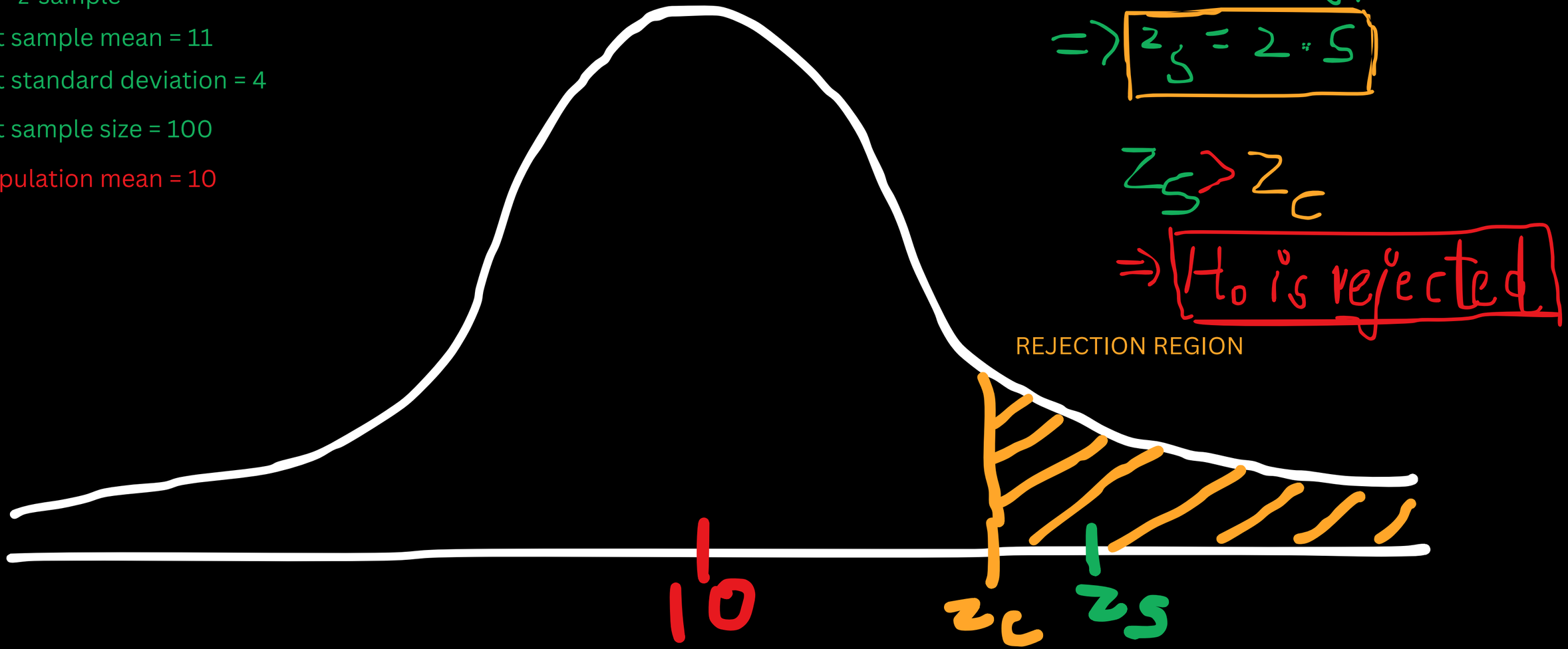
Population mean = 10

$$Z_s = \frac{X - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{11 - 10}{\frac{4}{\sqrt{100}}}$$

$$\Rightarrow \boxed{Z_s = 2.5}$$

$$Z_s > Z_c$$

$$\Rightarrow \boxed{H_0 \text{ is rejected}}$$



P-VALUE

Ho = Housing inflation is 10%

Ha = Housing inflation is more than 10%

Let alpha = 5% = 0.05

Zc = z-critical = 1.645 (based on 0.95 cumulative probability - z table)

Zs = z-sample

Let sample mean = 11

Let standard deviation = 4

Let sample size = 100

FROM Z-TABLE,
CUMULATIVE PROBABILITY
CORRESPONDING TO Z-SAMPLE
(2.5) = 0.9938

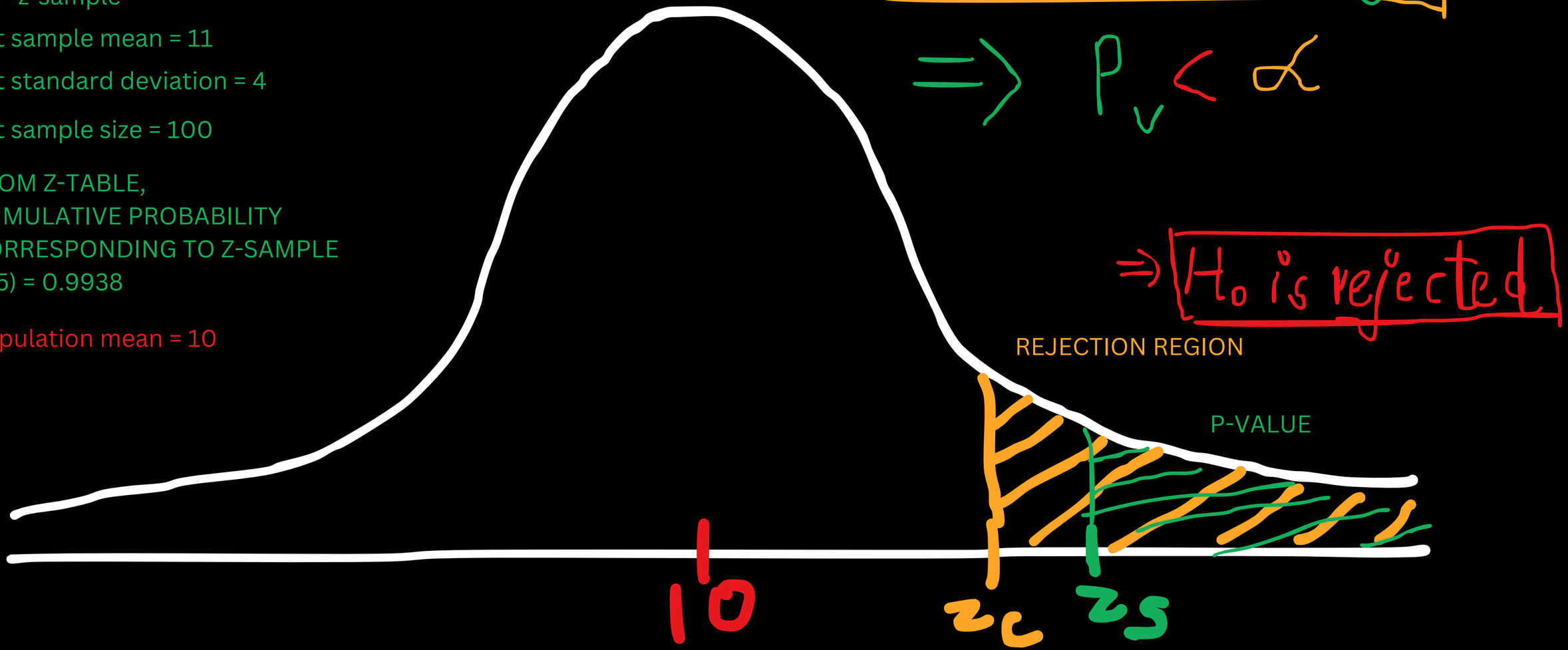
Population mean = 10

$P_v = 1 - 0.9938$

$\boxed{P_v = 0.0062}$

$\Rightarrow P_v < \alpha$

$\Rightarrow$ $\boxed{H_0 \text{ is rejected}}$



THANK YOU!