L107 Probability Distributions

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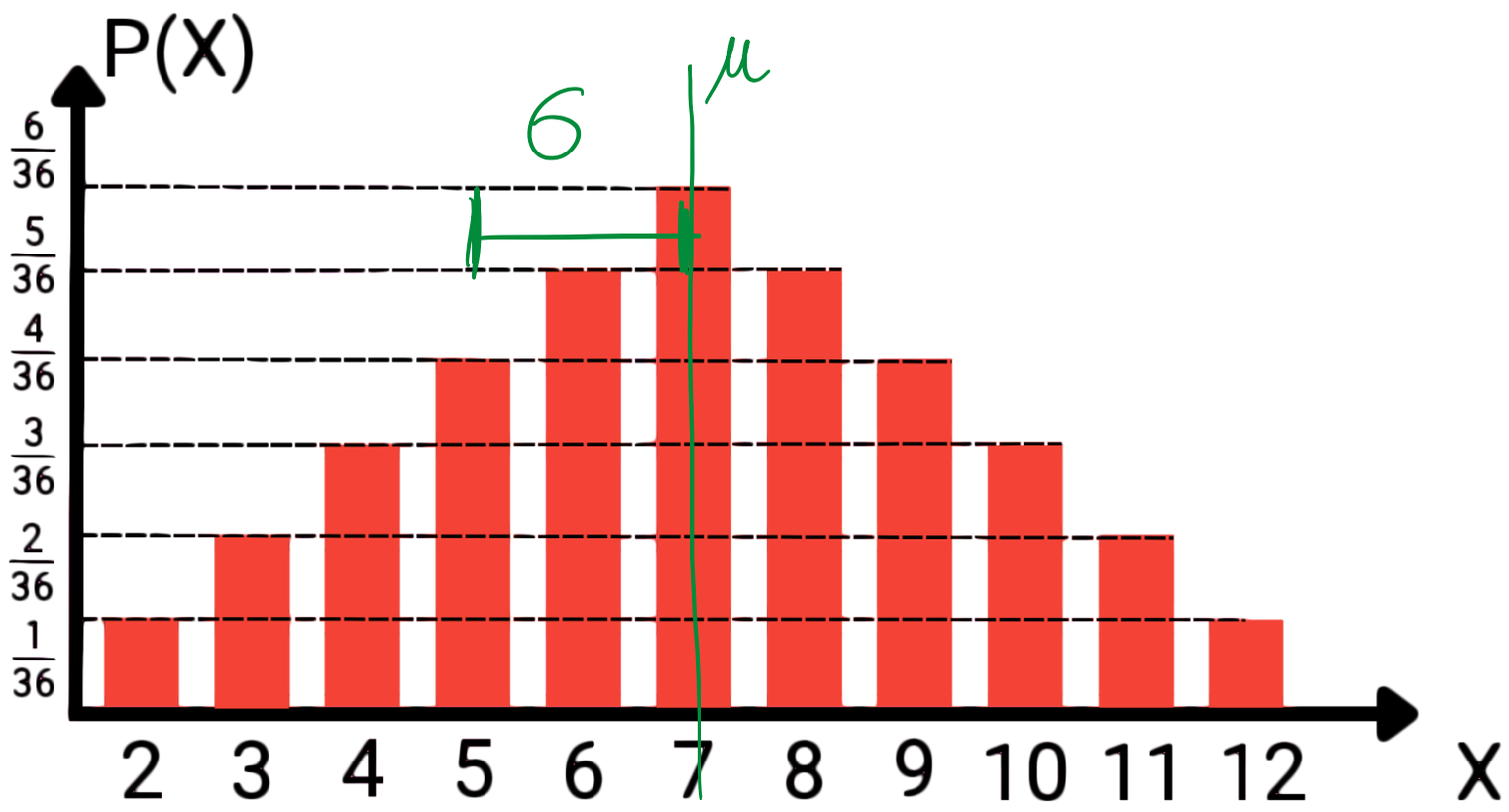

$$\mu = \text{MEAN} = \sum_x x \cdot P(x)$$

$$2 \cdot \frac{1}{36} + 3 \cdot \frac{2}{36} + 4 \cdot \frac{3}{36} + 5 \cdot \frac{4}{36} + 6 \cdot \frac{5}{36} + 7 \cdot \frac{6}{36} + 8 \cdot \frac{5}{36} +$$

$$+ 9 \cdot \frac{4}{36} + 10 \cdot \frac{3}{36} + 11 \cdot \frac{2}{36} + 12 \cdot \frac{1}{36} = \text{MEAN}$$

$$\Rightarrow \dots \Rightarrow \frac{252}{36} = 7$$

$$\mu = \text{MEAN} = 7$$

$$\sigma = \text{STANDARD DEVIATION} = \sqrt{\sigma^2}$$

σ^2 = VARIANCE

$$\sigma^2 = \sum_x (x - \mu)^2 P(x)$$

μ = Mean = 7

$$(2-7)^2 \cdot \frac{1}{36} + (3-7)^2 \cdot \frac{2}{36} + (4-7)^2 \cdot \frac{3}{36} + (5-7)^2 \cdot \frac{4}{36} + (6-7)^2 \cdot \frac{5}{36} +$$

$$+ (7-7)^2 \cdot \frac{6}{36} + (8-7)^2 \cdot \frac{5}{36} + (9-7)^2 \cdot \frac{4}{36} + (10-7)^2 \cdot \frac{3}{36} + (11-7)^2 \cdot \frac{2}{36} +$$

$$+ (12-7)^2 \cdot \frac{1}{36} \Rightarrow$$

$$\Rightarrow \dots \Rightarrow \frac{210}{36} = 5,83$$

σ^2 = VARIANCE = 5,83

σ = STANDARD DEVIATION = $\sqrt{\sigma^2}$ = 2,4