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Дано:

$X \sim U(a,b)$

$a = 200$

$b = 800$

Найти:

$E[X]$, $D[X]$

Решение:

$X \sim U(a,b)$

$a = 200$

$b = 800$

$E[X] = \frac{a+b}{2} =$

$= \frac{200+800}{2} = \frac{1000}{2} = 500$

$D[X] = \frac{(b-a)^2}{12} =$

$= \frac{(800-200)^2}{12} = \frac{600^2}{12} = \frac{(6 \cdot 10^2)^2}{12} = \frac{6^2 \cdot 10^4}{12} = \frac{6 \cdot 6}{2 \cdot 6} 10^4 = 3 \cdot 10^4 = 30000$

$S[X] = \sqrt{D[X]} =$

$= \sqrt{3 \cdot 10^4} = \sqrt{3} \cdot 10^2 \approx 1.73 \cdot 10^2 = 173$

Ответ:

$E[X] = 500$

$D[X] = 30000$

$S[X] \simeq 173$