Question #65581, Math / Statistics and Probability

Which of the following statements are true or false? Give reasons for your answers. By Chebyschev's inequality, P{mode of x- my greater than equal to 2 sigma} smaller than equal to 0.2

Answer.

By the Chebyshev's inequality $\boldsymbol{P(|X-\mu| \geq k\sigma) \leq \frac{1}{k^2}}$

So $\boldsymbol{P(|X-\mu| \geq 2\sigma) \leq \frac{1}{2^2} = \frac{1}{4} = 0.25 > 0.2}$

Statement is False.