

Sample inaccurate measurements are taken of the length of a stick.

The stick has a precise and accurate length 1.00... m.

All measurement values are real numbers.

This inaccurate measurement is taken 1000 times.

The precision of the measurement is perfect.

The absolute mean error in the measured value of the length is precisely 1 cm or 0.01 m.

This absolute error is normally distributed.

The mean positive error in the measured value of the length is precisely 1 cm or 0.01 m.

The mean negative error in the measured value of the length is precisely -1 cm or -0.01 m.

Not all measurements of the length have the same error.

For example, one measured value can be precisely 1.021 m, and another can be precisely 0.9914 m.

What is the (approximate) standard deviation of all measurements of the length?

Answer: $\frac{\pi}{2}$ cm