

1. Define calibration (2 pts)

*Comparison between measurements: one of known magnitude or correctness and another measurement made in as similar way as possible with a second device.*

2. A gage block comparator has a stated range specification of 0.0 to 4.0 inches. Can it be used to calibrate a 115mm gage block? Why? (1.0 inch = 25.4 mm) (3 pts)

$$115 \text{ mm} \times \frac{1.0 \text{ in}}{25.4 \text{ mm}} = 4.53 \text{ inches}$$

*No, the comparator cannot be used to calibrate the gage block because the size of the block exceeds the maximum specification value.*

3. A measurement tool is found to be out of calibration, the following information is documented. Describe the importance of each aspect (why is documentation necessary) (5 pts)

Key Information	Importance
Unique equipment ID number	<i>Ability to locate a specific tool</i>
Test points and measurement error	<i>What was the calibrated range tested? What is the accuracy/precision of the calibration tool.</i>
As found and As left	<i>What were the initial calibration results? Was the tool adjusted/repared? Was it left in a calibrated state?</i>
Adjustment/repairs	<i>Was the tool returned to a calibrated state – can it be used</i>
Evidence of mishandling, etc.	<i>Physical state of the equipment at the time the calibration was conducted.</i>