

The background of the image shows a workshop or laboratory setting. In the foreground, a man with dark skin is holding a metal ring with a hole in the center. He is using a vernier caliper to measure the inner diameter of the ring. In the background, another man is looking on, and a woman is working at a desk with a computer monitor. The scene is brightly lit and appears to be a professional or educational environment.

Quiz

Can you answer these 10 questions about dimensional metrology?

Question 1

Match each definition with the right term.

Reference used to express the result of a measured quantity.

Unit of measurement

Comparing a measurement standard with an object to determine their numerical relationship.

Metrology

Science of measurement and its application.

Measurement

Reference used to express the result of a measured quantity.

Unit of measurement

Comparing a measurement standard with an object to determine their numerical relationship.

Metrology

Science of measurement and its application.

Measurement

Question 2

Find the intruder.





Micrometer



Micrometer



Caliper!



Micrometer

Question 3

What does “traceability” mean in metrology?

A: The ability to follow the movement of a product and its components through all steps in the supply chain, similarly to food traceability.

Or

B: Traceability refers to an unbroken chain of comparisons relating an instrument's measurements to a known standard.



A: The ability to follow the movement of a product and its components through all steps in the supply chain, similarly to food traceability.

Or

B: **Traceability refers to an unbroken chain of comparisons relating an instrument's measurements to a known standard.**



Question 4

Which of the following measurements corresponds to the reading in inches shown in the figure?

A: 0.200 in

B: 0.178 in

C: 0.128 in





A: 0.200 in

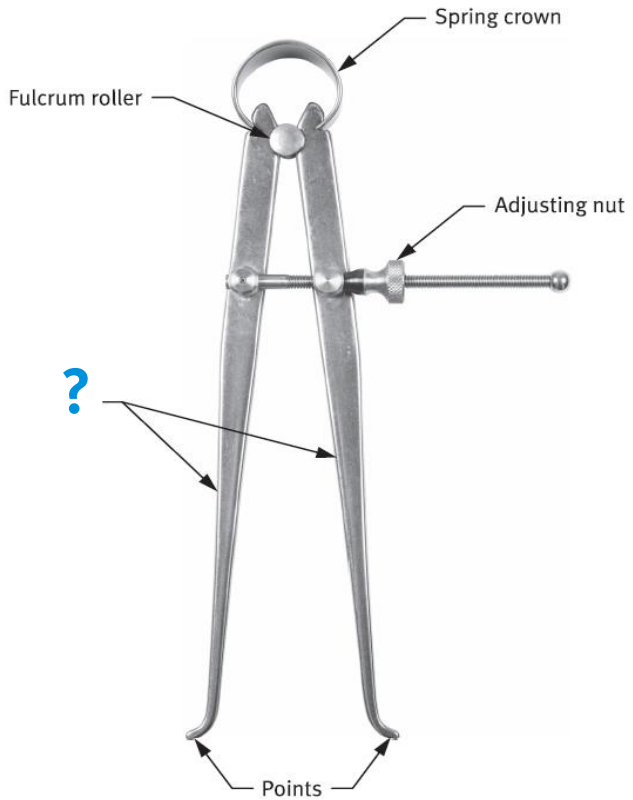
B: **0.178 in**

C: 0.128 in



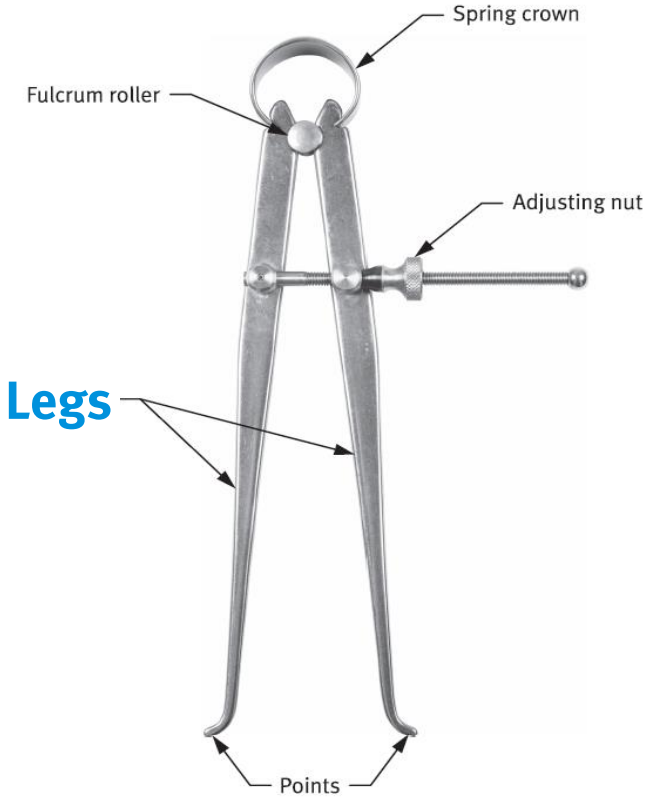
Question 5

How do you call this part of an inside caliper?





Legs, as simple as that!



Question 6

Geometric tolerances symbols appear on technical drawings. Can you name the fourth tolerance related to form?

Straightness



Flatness

Circularity



???

Straightness



Flatness

Circularity



Cylindricity

Question 7

Why does the plunger of a test indicator need to be about parallel to the measured surface?

- A: To minimize cosine error.
- B: To reduce friction between the tip and the surface.
- C: To limit measurement saturation.
- D: To increase the tolerance zone.



A: **To minimize cosine error.**

B: To reduce friction between the tip and the surface.

C: To limit measurement saturation.

D: To increase the tolerance zone.



Question 8

This object may look like a toy train wagon, but it's actually a metrology tool: how is it called and what is it used for?



Question 8

It's a **sine bar** and it is used to **create and validate angles**.



Question 9

Match each term related to process capability with the correct definition or description.

Refers to how the variability of a stable process compares with specifications.

Limits established for the quality characteristics of units of products.

Indicate the allowance variation for average of samples.

Quantitative estimations of the variability of a process relative to its specifications.

Control limits

Process capability

Specifications

Process capability indices

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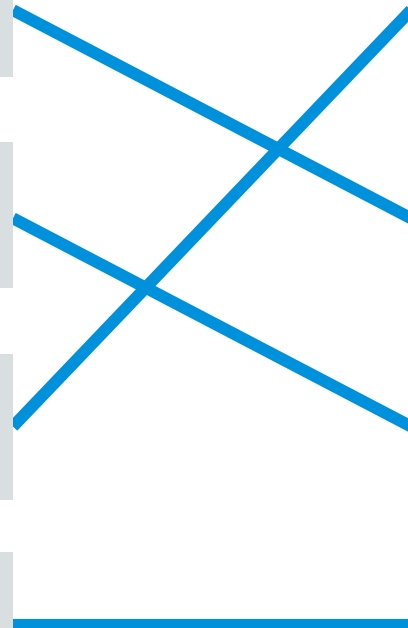
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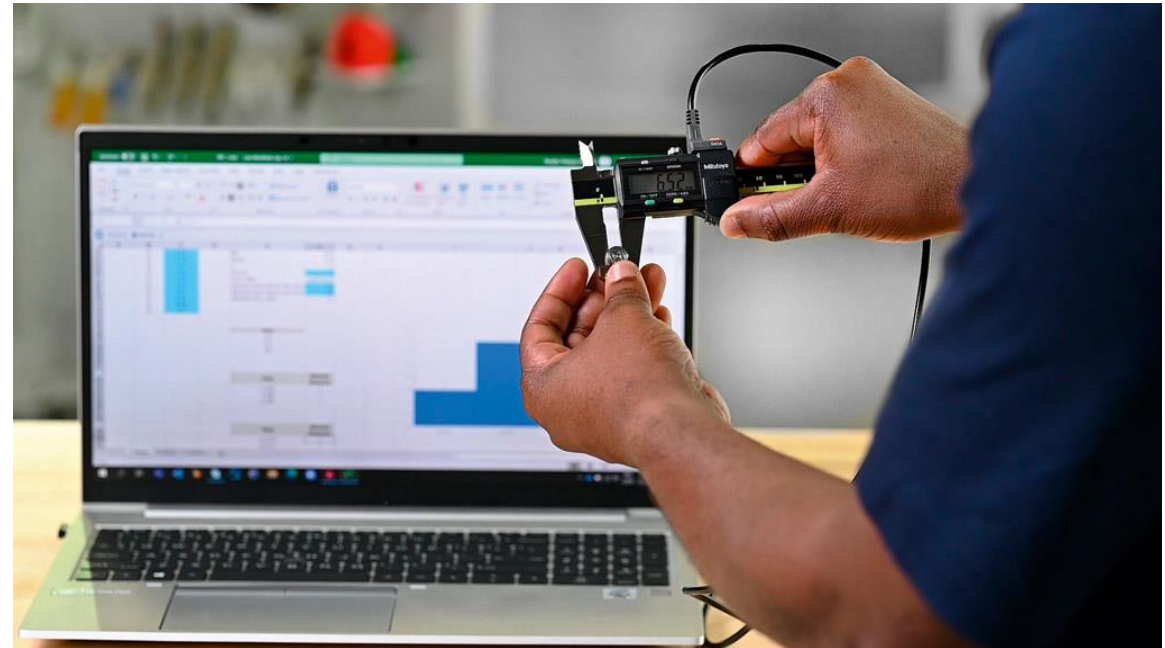
Process capability indices



Question 10

Which of the following are technical tools of statistical process control (SPC)?

- A: Pareto chart
- B: Digital caliper
- C: Spreadsheet software
- D: Control chart
- E: SPC output of a digital caliper
- F: Histogram



A: **Pareto chart**

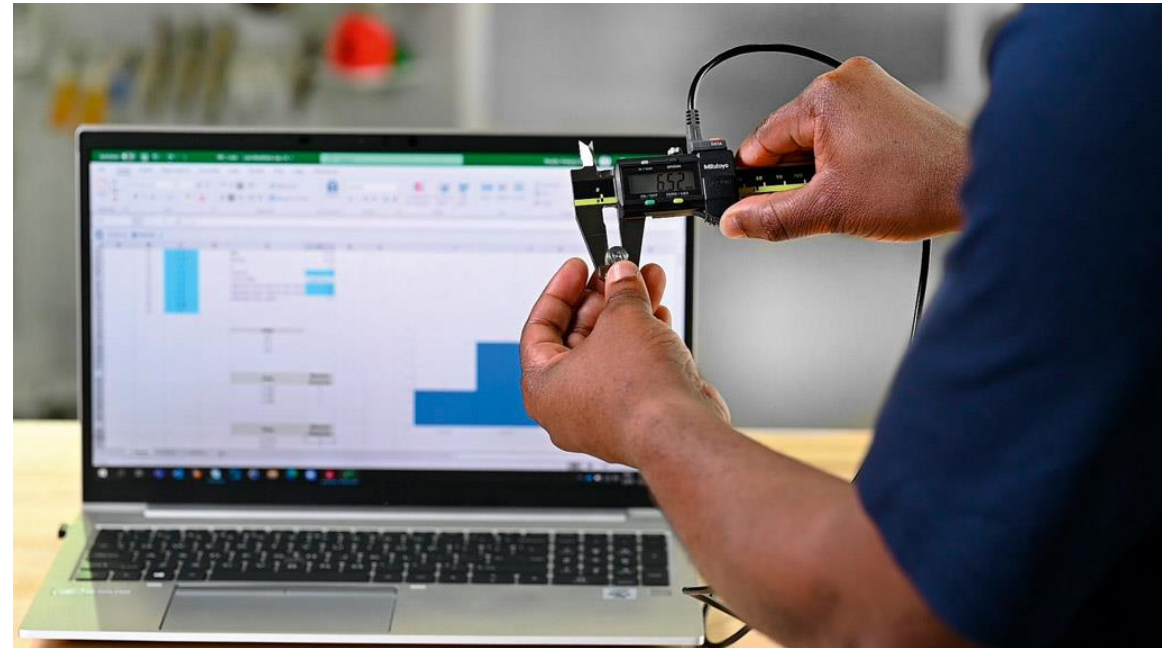
B: Digital caliper

C: Spreadsheet software

D: **Control chart**

E: SPC output of a digital caliper

F: **Histogram**



Measure 😊 your performance

How many right answers did you get?

Above 8

You are a dimensional metrology expert! You should teach us!

Between 4 and 7

You have a good knowledge base – keep up the good work!

Under 3

You could use a little help. Don't worry, we've got your back!

Learn more about dimensional metrology – have a look at our eLearning courses [here](#) and training packages [here](#).

