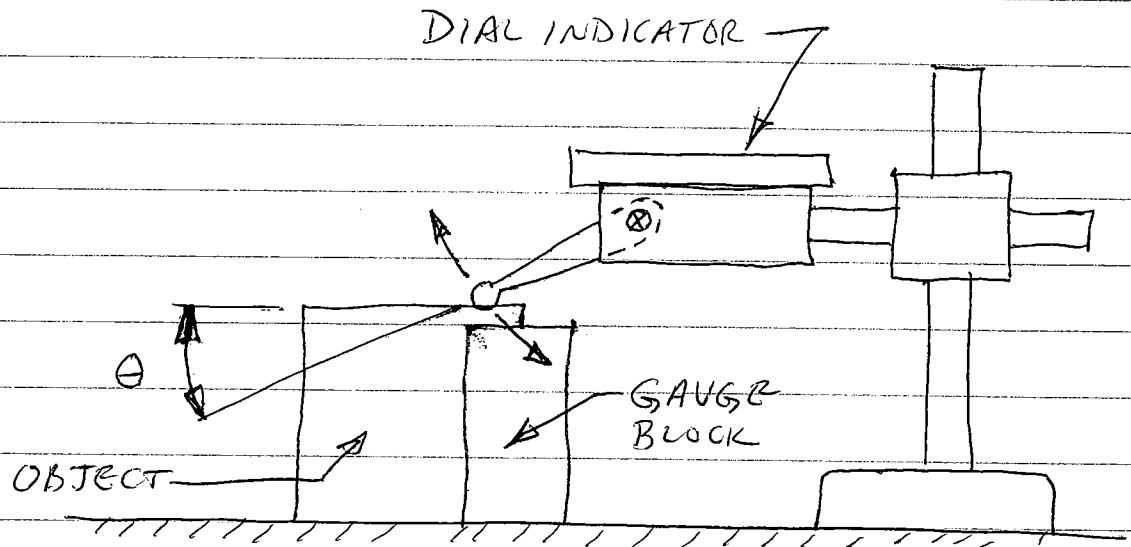


H.W. # I

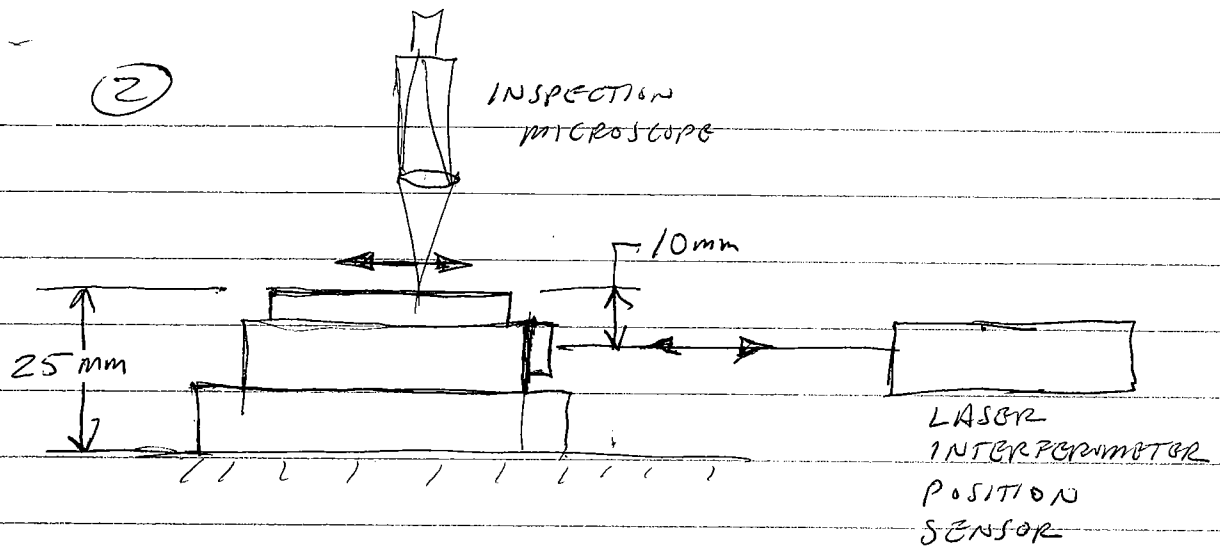
①



MEASURING OBJECT ON SURFACE PLATE
RELATIVE TO GAUGE BLOCK

$\theta = 20^\circ$ MEASURED HEIGHT DIFFERENCE = $20 \mu m$

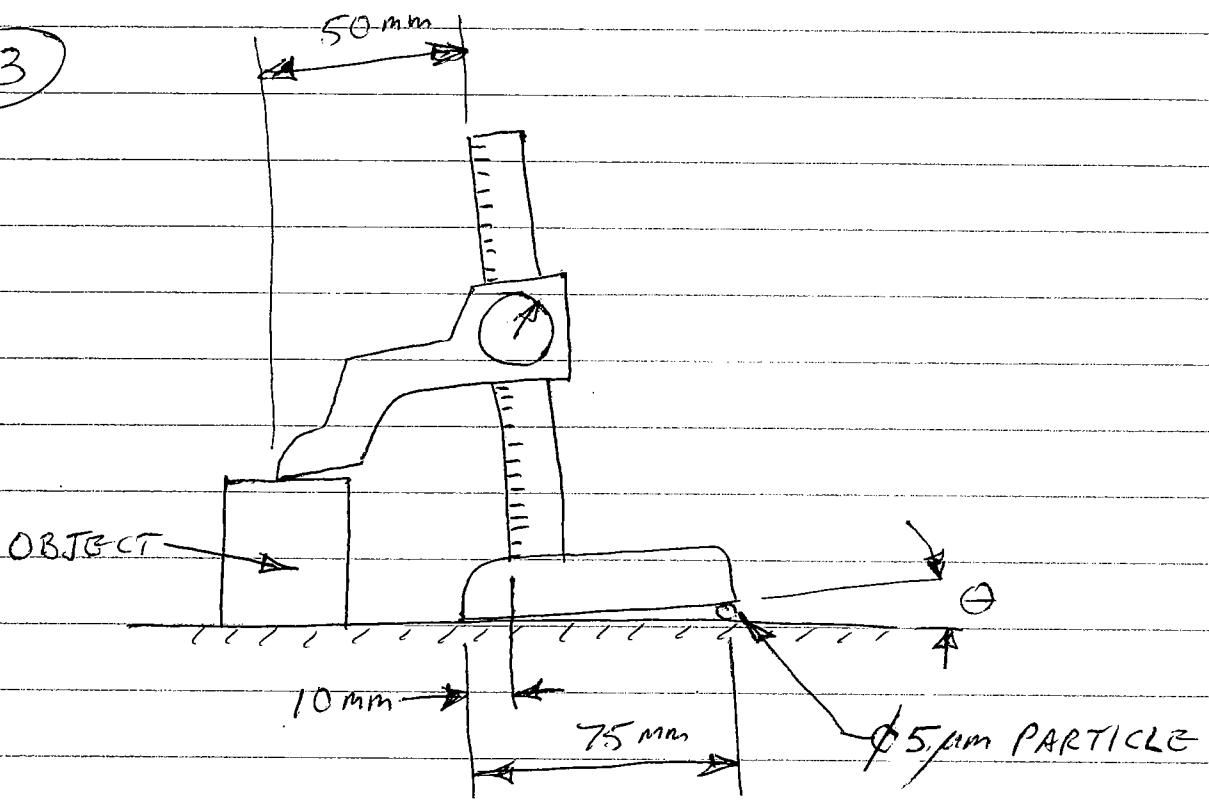
- 1) WHAT IS COSINE ERROR?
- 2) WHAT IS THE ACTUAL HEIGHT?



STAGE PITCH ERROR $\pm 3 \mu\text{RAD}$ BETWEEN
POINTS A AND B.
MICROSCOPE IS USED TO MEASURE THE DISTANCE
BETWEEN TWO TARGETS AT POINTS A AND B.

- ① WHAT IS ABBE OFFSET?
- ② WHAT IS THE ERROR?

3

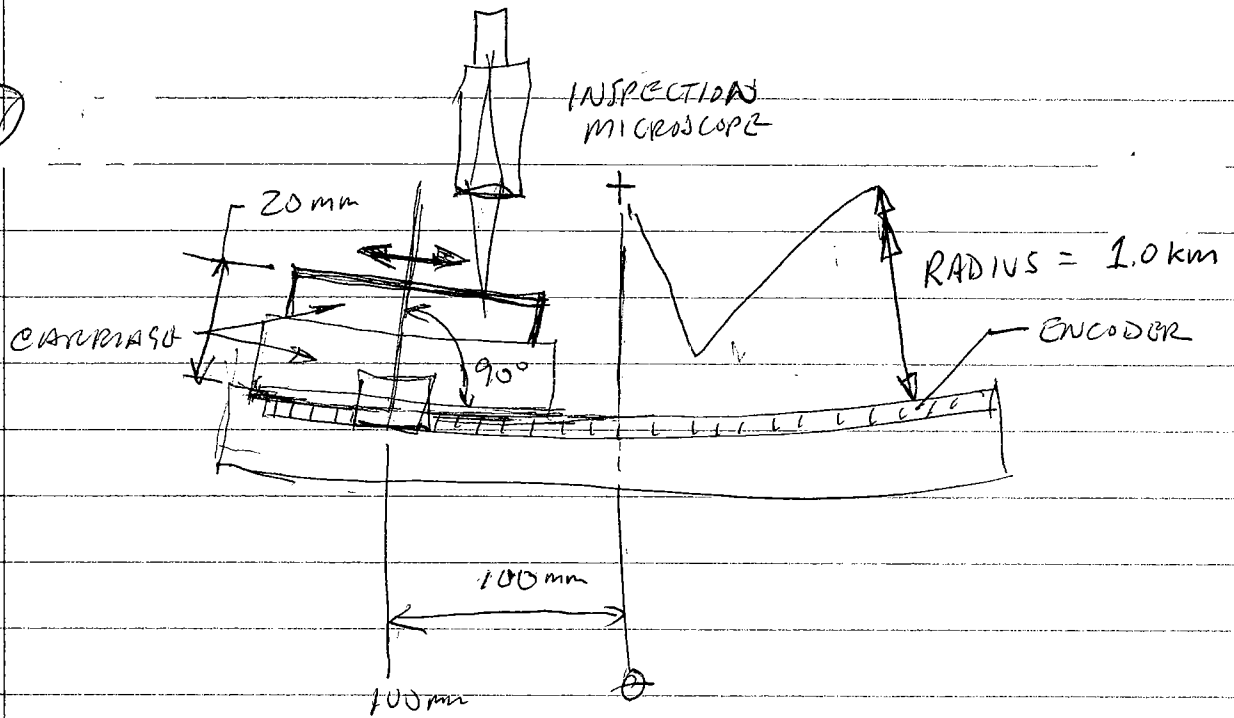


MEASURING OBJECT ON DIRTY SURFACE PLATE

READING IS 60.1 mm

- 1) WHAT IS THE COSINE ERROR?
- 2) WHAT IS THE ACTUAL HEIGHT?
(HINT: THERE IS A SIN ERROR COMPONENT ALSO)

4)



IF MICROSCOPE MEASURES DISTANCE BETWEEN TWO FEATURES 100 mm APART.

- 1) WHAT IS THE - ABBE OFFSET?
- 2) WHAT IS THE ERROR?
- 3) WHAT IS THE ACTUAL DISTANCE?