1) Print hardcopy of this sheet. Estimate angle  by eye.  \_\_\_\_\_\_\_\_\_\_



a

c

b

2) Write an equation to determine angle  as a function

of lengths a, b and c.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) Measure a, b and c using mm. a \_\_\_\_\_\_\_\_\_\_ b \_\_\_\_\_\_\_\_\_\_ c \_\_\_\_\_\_\_\_\_\_

4) Compute  using parts 2) and 3) above.  \_\_\_\_\_\_\_\_\_\_

5) Measure  with a protractor.  \_\_\_\_\_\_\_\_\_\_

2

3

4

A

# B



a

c

b

C

6) Links AC and BC are rigid. Determine  when  is

+10 mm/s at this position. Use link lengths from 3) above.

  \_\_\_\_\_\_\_\_\_\_

7) What is this mechanism? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8) Draw a **complete** free-body diagram of slider block 4 for static equilibrium including friction.

B

T12

3





# C

P

4

2

A

1

1

9) What is this mechanism? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10) Complete the matrix multiplication.



11) Invert the matrix.

