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**Prelab Questions**

These questions need to be completed before entering the lab. Please show all workings.

**Marker's  
Initials**

**Prelab 1**

A cylindrical object of volume  $V$  is immersed completely in a liquid where  $\rho$  is the density of the liquid. Write the expression for the buoyant force on the object, using these terms.

**Prelab 2**

A cylindrical object of mass  $m$ , bottom area  $A$ , and height  $H$  is attached to a string and at rest when immersed at a distance  $h$  in a liquid with density  $\rho$ . Let  $T$  be the tension in the string. Draw the free body diagram for the cylinder when it is partially submerged. Label all forces clearly and write expressions for each force.

**STAPLE YOUR PRE-LAB TO THIS PAGE**

**Name and Student Number:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Partner:** \_\_\_\_\_

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**QUESTION 1:**

**QUESTION 2:**

a)

b)

c)

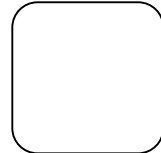


**Table 3:** Note: Print a copy of  $T$  vs  $h$  graph with correct format.

|           | Value | Uncertainty | Units |
|-----------|-------|-------------|-------|
| Slope     |       |             |       |
| Intercept |       |             |       |

**CHECKPOINT:**

Slope expression and free-body diagram.



Staple graph to opposing page

QUESTION 3:

QUESTION 4:

**QUESTION 5:**

a)

b)

**QUESTION 6:**

a)

b)