

PHY 181: Summer 2023  
Worksheet 3

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**1 Unit Conversions**

**1.1 Conversions to metric base units**

Perform the following unit conversions.

43cm to m: \_\_\_\_\_

37km to m: \_\_\_\_\_

111mg to g: \_\_\_\_\_

50ms to s: \_\_\_\_\_

10,000 $\mu$ s to s: \_\_\_\_\_

**1.2 Metric Conversions**

Perform the following unit conversions.

88mm to km: \_\_\_\_\_

72Gg to kg: \_\_\_\_\_

511Tm to cm: \_\_\_\_\_

119 $\mu$ s to ds: \_\_\_\_\_

742ks to ms: \_\_\_\_\_

### 1.3 Conversions between systems

Perform the following unit conversions.

11yds to m: \_\_\_\_\_

25  $m^2$  to  $cm^2$ : \_\_\_\_\_

723  $kg \cdot m/s^2$  to  $g \cdot cm/s^2$ : \_\_\_\_\_

20lbm to kg: \_\_\_\_\_

## 2 Net Force

Find the net force in each of the cases below.

78m to feet: \_\_\_\_\_

20N right and 5 N left: \_\_\_\_\_

37kg to lbm: \_\_\_\_\_

50N up and 30N down: \_\_\_\_\_

### 1.4 Conversions of derived dimensions

Perform the following unit conversions.

20km/hr to m/s: \_\_\_\_\_

800N right and 1000N left: \_\_\_\_\_

151lb West and 30lb East: \_\_\_\_\_

157 mi/hr to ft/s: \_\_\_\_\_

980N down and 490N up: \_\_\_\_\_