Name _____ Date _____

Honors Physics Gravity and Circles WS #2

Period _____ Mrs. Nadworny

(30 pts)

Determining the Value of 'g'

Procedure: Using the equation for acceleration due to gravity and the values provided in the table below, determine the acceleration due to gravity for the other seven planets and the Sun. In the spaces provided show your calculations for each planet. The table will count as your givens and unknowns. Write your final answers in the box provided. Remember to use proper significant figures.

Planet	Radius (m)	Mass (kg)
Mercury	2.43×10^{6}	3.2×10^{23}
Venus	6.073×10^{6}	4.88×10^{24}
Mars	3.38×10^{6}	6.42×10^{23}
Jupiter	6.98×10^{7}	1.901×10^{27}
Saturn	5.82×10^{7}	5.68×10^{26}
Uranus	2.35×10^{7}	8.68×10^{25}
Neptune	2.27×10^{7}	1.03×10^{26}
Sun	6.96×10^{8}	1.99×10^{30}

Data Processing: (2 pts each)

Mercury

Venus

Continued on next page

Mars

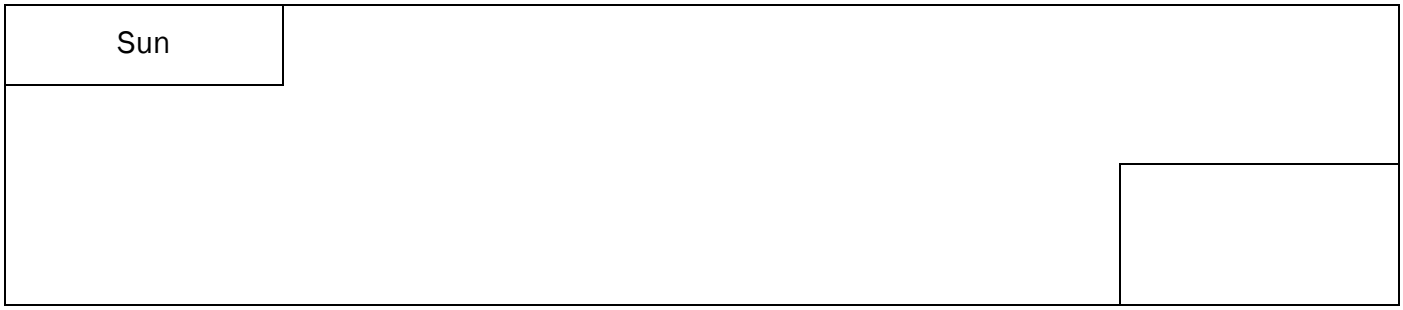
Jupiter

Saturn

Uranus

Neptune

Continued on next page



Procedure: Using your mass in pounds (lbs), calculate your mass in kilograms (kg). Show your work below using dimensional analysis. (2 pts)

Conversion factor: 1 kg = 2.2 lbs

Procedure: Determine your weight on each planet using the equation $F_{grav} = m \bullet g$. Show **one** sample calculation below using the GUESS method, and fill the remainder of your answers into the data table provided. Remember to use proper significant figures. (12 pts)

Planet	**Weight (F_{grav})**
Mercury	
Venus	
Earth	
Mars	
Jupiter	
Saturn	
Uranus	
Neptune	
Sun	