Weight Problems WS

Instructions: Complete the following problems using the equation below. SHOW ALL WORK. No work = no credit. Do not forget your units.

Weight Formula
Weight = Mass × Acceleration due to gravity
$$W = mg$$

1. On Earth, g is always equal to _____.

2. A locomotives mas is 18181.81 kg. What is its weight?

W= _____

g= _____

m= _____

3. A small car weighs 10168.25 N. What is its mass?

W= _____

g= _____

m= _____

4. What is the weight of an infant whose mass is 1.76 kg?

W= _____

g= _____

 m= _____

5. An F-14's mass if 29,545 kg. What is its weight?

W= _____

g= _____

 m= _____

6. What is the mass of a runner whose weight is 648 N?

W= _____

g= _____

m= _____

Instructions: Solve the following problems using the table to the right for the correct values of g. (Use values m/s²)

Gravity Table

OBJECT	ACCELERATION DUE TO GRAVITY	GRAVITY
Earth	9.8 m/s² or 32 ft/s ²	1 G
the Moon	1.6 m/s² or 5.3 ft/s ²	.16 G
Mars	3.7 m/s² or 12.2 ft/s ²	.38 G
Venus	9.5 m/s² or 31 ft/s ²	.88 G
Jupiter	24.5 m/s² or 80 ft/s ²	2.54
the Sun	275 m/s² or 896 ft/s ²	28 G

7. A locomotives mas is 18181.81 kg. What is its weight on the moon?

W= _____

g= _____

m= _____

8. A small car weighs 10168.25 N. What is its mass on Mars?

W= _____

g= _____

m= _____

9. What is the weight of an infant on Venus whose mass is 1.76 kg?

W= _____

g= _____

m= _____

10. An F-14's mass if 29,545 kg. What is its weight on Jupiter?

W= _____

g= _____

m= _____

11. What is the mass of a runner on the sun whose weight is 648 N?

W= _____

g= _____

m= _____