

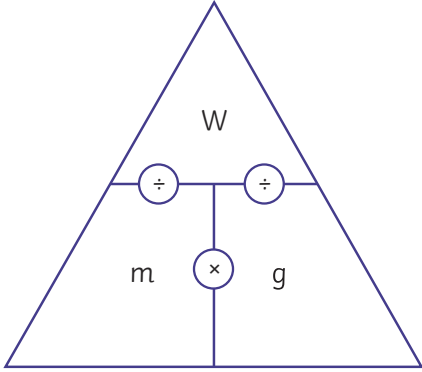
Calculating Weight

Bronze



Calculate the weight of the Mars rover Curiosity on each of the planets in our Solar System.

Remember to use the equation $W = mg$. The formula triangle may help you.



Earth has already been done for you.

Planet Name	Gravitational Field Strength (N/kg)	Mass of Mars rover Curiosity (kg)	Weight (N)
Mercury	3.70	900	
Venus	8.87	900	
Earth	9.81	900	8829
Mars	3.71	900	
Jupiter	25.00	900	
Saturn	10.40	900	
Uranus	9.00	900	
Neptune	11.70	900	

Extra Questions

1. Which planet has the greatest gravitational field strength?

2. On which planet does the Curiosity have the least weight?

3. On Pluto, the Curiosity has a weight of 441N. Calculate the gravitational field strength of Pluto.



Calculating Weight Answers

Planet Name	Gravitational Field Strength (N/kg)	Mass of Mars rover Curiosity (kg)	Weight (N)
Mercury	3.70	900	3330
Venus	8.87	900	7983
Earth	9.81	900	8829
Mars	3.71	900	3339
Jupiter	25.00	900	22 500
Saturn	10.40	900	9360
Uranus	9.00	900	8100
Neptune	11.70	900	10 530

1. Which planet has the greatest gravitational field strength?

Jupiter

2. On which planet does the Curiosity have the least weight?

Mercury

3. On Pluto, the Curiosity has a weight of 441N. Calculate the gravitational field strength of Pluto.

$$W = mg$$

$$\text{rearranged to } g = W \div m$$

$$441 \div 900 = 0.49\text{N/kg}$$

