9J Gravity and space...Gravity and circular motion

plenary one

level 5
level 6
level 7

Science Interactive LTD. PO BOX 50764 LONDON NW6 9AT email: sales@science-interactive.co.uk web: www:science-interactive.co.uk

Match the following statements:

Click mouse to reveal answer

The value of gravity in Newtons per kilogram on Earth is...	→	It has a greater mass than our planet, Earth.
The value of gravity on any planet in our solar system depends on its...	→	Apple in an orchard fall to the ground.
Here on Earth, the tides are caused by the...	→	Zero, because there is no gravity.
In deep space, your mass remains the same but your weight is...	→	Gravitation pull of the moon's mass on water in the oceans and seas.
Newton was inspired to ask why objects fall to Earth, when he saw an...	→	10 Newton's per kilogram.
Jupiter has a large gravitational force on its surface because...	→	Mass.

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Answer:

The value of gravity in Newtons per kilogram on Earth is...	10 Newton's per kilogram.
The value of gravity on any planet in our solar system depends on its...	Mass.
Here on Earth, the tides are caused by the...	Gravitation pull of the moon's mass on water found in the oceans and seas.
In deep space, your mass remains the same but your weight is...	Zero, because there is no gravity.
Newton was inspired to ask why objects fall to Earth, when he saw an...	Apple in an orchard fall to the ground.
Jupiter has a large gravitational force on its surface because...	It has a greater mass than our planet, Earth.

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Decide whether the following statements are true or false:

Click mouse to reveal answer

Statements:	***True***	***False***
The value of gravity on Earth is 12 Newtons per kilogram ?	True	False
Pluto has the highest value of gravity of any of the planets found in the solar system ?	True	False
The Sun orbits the Earth once every year ?	True	False
The moon is being thrown out whilst being kept in by the gravitational pull of the Earth ?	True	False
Newton was famous for his three laws of motion ?	True	False
An object with a mass of 13Kg on Earth has a weight of 130 Newtons ?	True	False
The value of gravity on a planet's surface depends on its volume ?	True	False
Sea tides are caused by strong winds ?	True	False
In deep space, your mass remains the same but your weight is zero ?	True	False
All objects free from air resistance accelerate towards Earth at a rate of $10m/s^2$	True	False

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Answer:

Statements:	***True***	***False***
The value of gravity on Earth is 12 Newtons per kilogram ?		False
Pluto has the highest value of gravity of any of the planets found in the solar system ?		False
The Sun orbits the Earth once every year ?		False
The moon is being thrown out whilst being kept in by the gravitational pull of the Earth ?	True	
Newton was famous for his three laws of motion ?	True	
An object with a mass of 13Kg on Earth has a weight of 130 Newtons ?	True	
The value of gravity on a planet's surface depends on its volume ?		False
Sea tides are caused by strong winds ?		False
In deep space, your mass remains the same but your weight is zero ?	True	
All objects free from air resistance accelerate towards Earth at a rate of $10m/s^2$	True	

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plenary three

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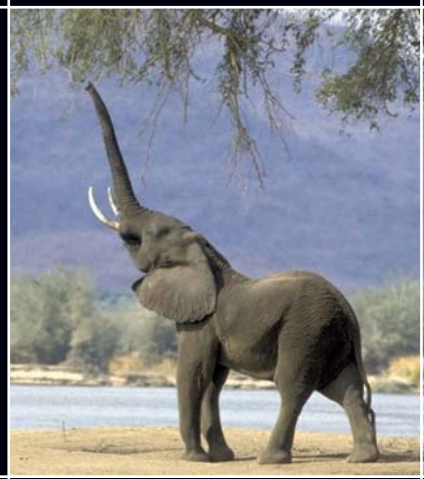
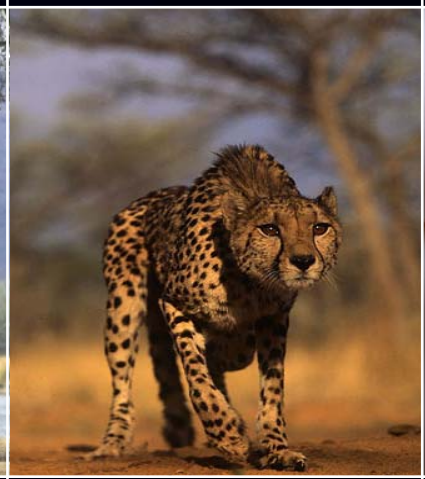
Look at the four pictures below. Work out the weight of each object, here on Earth. Use the rounded up value of 10N/kg for the value of g:

Click mouse to reveal answer

Object	Elephant	Cheetah	Egg	Space Shuttle
Picture				
Gravity	9.81N/Kg	9.81N/Kg	9.81N/Kg	9.81N/Kg
Mass	3500Kg	50Kg	0.1Kg	30,000Kg
Weight	Calculation: 3500Kg x 10N 35,000N	Calculation: _____ _____ ?	Calculation: _____ _____ ?	Calculation: _____ _____ ?

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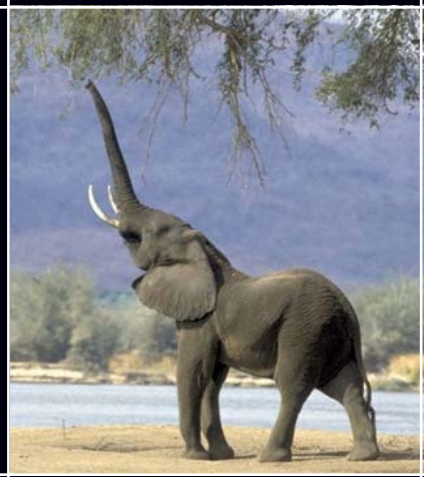
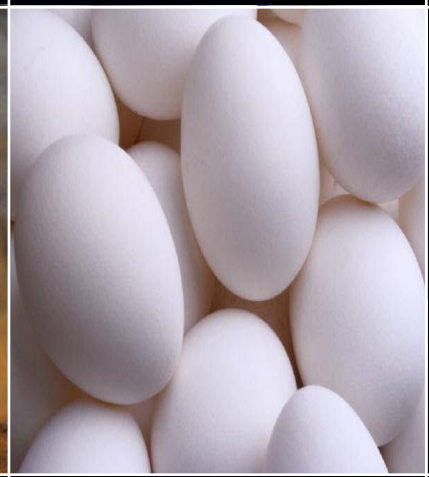
Answer:

Object	Elephant	Cheetah	Egg	Space Shuttle
Picture				
Gravity	9.81N/Kg	9.81N/Kg	9.81N/Kg	9.81N/Kg
Mass	3500Kg	50Kg	0.1Kg	30,000Kg
Weight	Calculation: 3500Kg x 10N 35,000N	Calculation: 50Kg x 10N 500N	Calculation: 0.1Kg x 10N 1N	Calculation: 30,000Kg x 10N 300,000N