



Name _____ Class _____ Date _____

1 A **15-kilogram** mass weighs **60 newtons** on planet X. The mass is allowed to fall freely from rest near the surface of the planet. After falling for **6.0 seconds**, the **acceleration** of the mass is

- A 0.25 m/s²
- B 10 m/s²
- C 24 m/s²
- D 4.0 m/s²

3 **Gravitational field strength** is to **newtons per kilogram** as **electric field strength** is to

- A coulombs per joule
- B coulombs per newton
- C joules per coulomb
- D newtons per coulomb

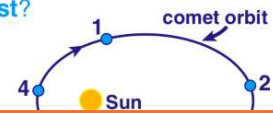
2 The **gravitational force of attraction** between two objects would be **increased** by

- A doubling the mass of both objects, only
- B doubling the distance between the objects, only
- C doubling the mass of both objects and doubling the distance between the objects
- D doubling the mass of one object and doubling the distance between the objects

4 The diagram below represents the orbit of a comet about the Sun.

At which **position** in its orbit is the comet's **speed greatest**?

- A 1
- B 2



5



PREVIEW

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7

- A 125°C to -391°C
- B 125°C to -155°C
- C 671°C to 391°C
- D 671°C to 155°C



- B 44 m
- C 29 m
- D 9.8 m



9 What is the magnitude of the **gravitational force** between two **5.0-kilogram** masses separated by a distance of **5.0 meters**?

- A 5.0×10^0 N
- B 3.3×10^{-10} N
- C 6.7×10^{-11} N
- D 1.3×10^{-11} N



10 A **2.0-kilogram** mass weighs **10 newtons** on planet X. The **acceleration due to gravity** on planet X is approximately

- A 0.20 m/s²
- B 5.0 m/s²
- C 9.8 m/s²
- D 20 m/s²



ANSWER KEY

A **15-kilogram** mass weighs **60 newtons** on planet X. The mass is allowed to fall freely from rest near the surface of the planet. After falling for **6.0 seconds**, the **acceleration** of the mass is

- A 0.25 m/s²
- B 10 m/s²
- C 24 m/s²
- D 4.0 m/s²

(d)

The **gravitational force of attraction** between two objects would be **increased** by

- A doubling the mass of both objects, only
- B doubling the distance between the objects, only
- C doubling the mass of both objects and doubling the distance between the objects
- D doubling the mass of one object and doubling the distance between the objects

(a)

Gravitational field strength is to **newtons per kilogram** as **electric field strength** is to

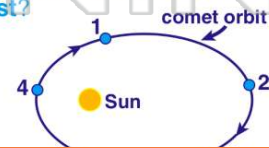
- A coulombs per joule
- B coulombs per newton
- C joules per coulomb
- D newtons per coulomb

(d)

The diagram below represents the orbit of a comet about the Sun.

At which **position** in its orbit is the comet's **speed greatest**?

- A 1
- B 2
- C 3



(d)



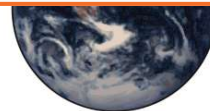
PREVIEW

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- B 125°C to -155°C
- C 671°C to 391°C
- D 671°C to 155°C

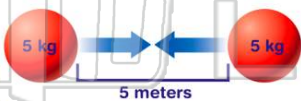


- D 9.8 m



What is the magnitude of the **gravitational force** between two **5.0-kilogram** masses separated by a distance of **5.0 meters**?

- A 5.0×10^0 N
- B 3.3×10^{-10} N
- C 6.7×10^{-11} N
- D 1.3×10^{-11} N



(c)

A **2.0-kilogram** mass weighs **10 newtons** on planet X. The **acceleration due to gravity** on planet X is approximately

- A 0.20 m/s²
- B 5.0 m/s²
- C 9.8 m/s²
- D 20 m/s²

(b)