GERAK JATUH BEBAS

TUJUAN PEMBELAJARAN:

Menyelidiki karakteristik gerak lurus dengan kecepatan konstan (tetap) dan gerak lurus dengan percepatan konstan (tetap) berikut makna fisisnya

Take Notes Here:

Nama Lengkap:

Take Notes Here:

Vocabulary Practice

Instructions: drag the vocabulary term and match it to its definition.

acceleration

equation

fundamental

predict

initial

Vocabulary Term	Definition
	forming a necessary base or core; of central importance.
	the rate at which an object changes its velocity over time.
	a mathematical statement that shows the equality of two expressions.
	to estimate or forecast (a future event or trend) based on past experience or observations.
	existing or occurring at the beginning.

Read and Take Notes

In the study of physics, one of the fundamental concepts is the motion of objects. Objects can move in various ways, and one interesting type of motion is known as free fall. Free fall occurs when an object is falling under the influence of gravity alone, with no other forces acting upon it.

Take Notes Here:

Read and Take Notes

When an object is in free fall, it experiences a constant acceleration due to gravity. On Earth, this acceleration is approximately 9.8 meters per second squared. This means that for every second an object is in free fall, its velocity increases by 9.8 meters per second.

Take Notes Here:

Read and Take Notes

To better understand the concept of free fall, let's consider an example. Imagine dropping a ball from the top of a tall building. As soon as the ball is released, it begins to fall towards the ground. Gravity pulls the ball downwards, causing it to accelerate. The longer the ball falls, the faster it gets.

Take Notes Here:

Read and Take Notes

During free fall, the distance an object travels is directly related to the time it spends falling. This relationship can be described by a simple equation: d = 1/2gt^2, where d represents the distance, g is the acceleration due to gravity, and t is the time in seconds.

Take Notes Here:

Read and Take Notes

Using this equation, we can calculate the distance traveled by an object in free fall at any given time. For example, if we want to know how far the ball has fallen after 3 seconds, we can substitute t = 3 into the equation and solve for d.

Take Notes Here:

Read and Take Notes

It's important to note that the equation assumes the object is dropped from rest, meaning it starts with an initial velocity of zero. If the object is thrown or has an initial velocity, additional equations must be used to account for this.

Take Notes Here:

Read and Take Notes

In conclusion, free fall is a fascinating concept in physics that involves the motion of objects under the influence of gravity alone. By understanding the principles of free fall, we can accurately predict the distance traveled by objects in free fall at any given time.

Take Notes Here:

Multiple Choice Question

What is the acceleration due to gravity on Earth during free fall?

A) 9.8 meters per second squared

B) 4.9 meters per second squared

C) 6.2 meters per second squared

D) 12.5 meters per second squared

Which answer did you pick and why?

Multiple Choice Question

What is the relationship between the distance traveled and the time spent falling during free fall?

A) The distance traveled is directly proportional to the time spent falling.

B) The distance traveled is inversely proportional to the time spent falling.

C) The distance traveled is unrelated to the time spent falling.

D) The distance traveled is determined by the initial velocity.

Which answer did you pick and why?

Multiple Choice Question

Which equation can be used to calculate the distance traveled by an object in free fall at any given time?

A) d = 1/2gt^2

B) d = gt^2

C) d = g/t^2

D) d = 2gt

Which answer did you pick and why?

Short Answer Question

What is free fall and how does it occur?

Write your response below:

Short Answer Question

What is the acceleration due to gravity on Earth and how does it affect objects in free fall?

Write your response below: