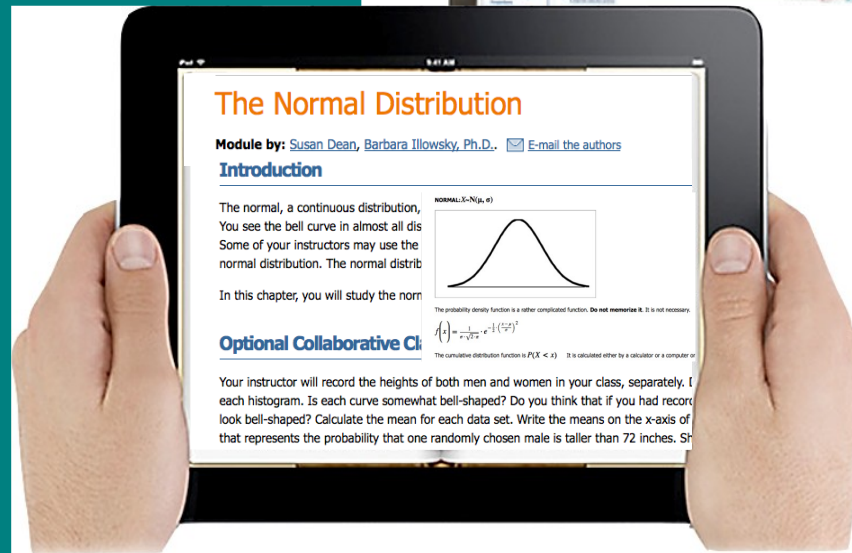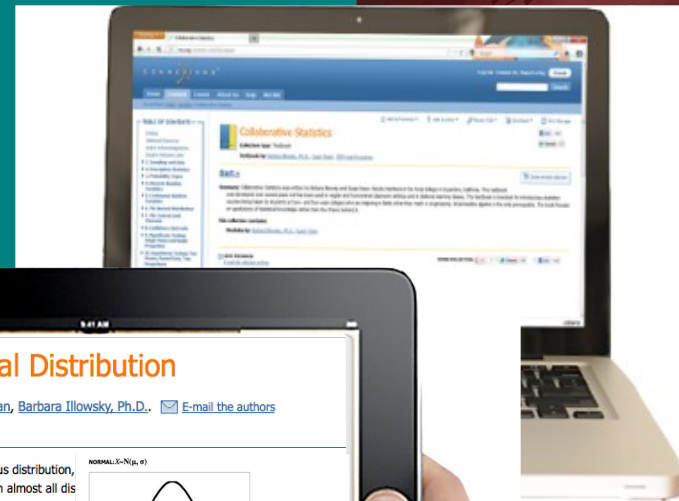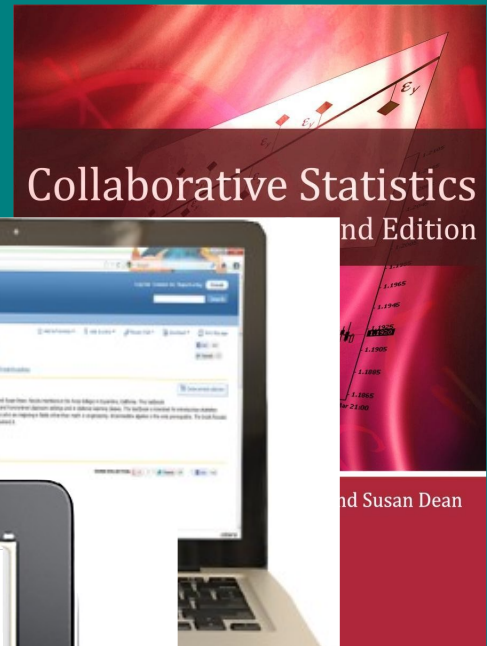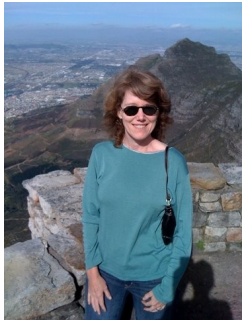# Textbooks in Browsers

Kathi Fletcher
@kefletcher, @oerpub

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My Background

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Connexions PM and Technical Director 4 Yrs
Shuttleworth Foundation Fellow 3 Yrs
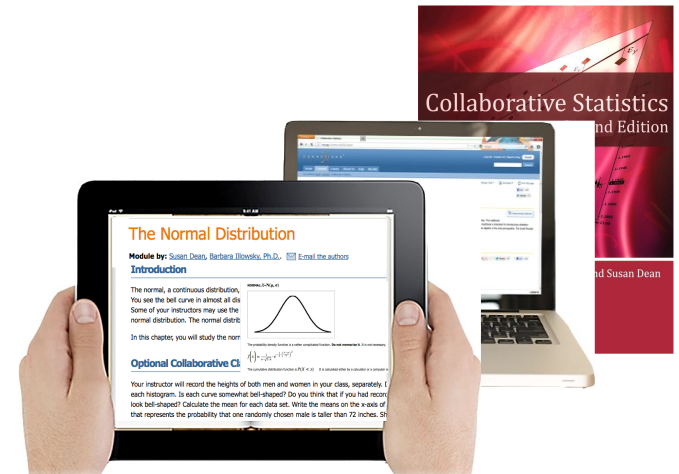
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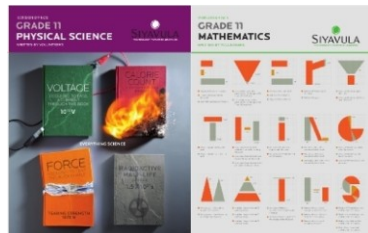# *Vision for learning*

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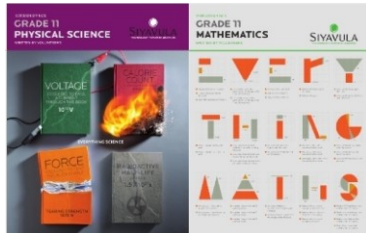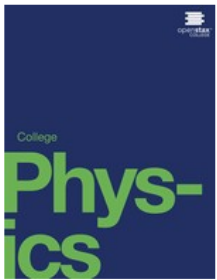
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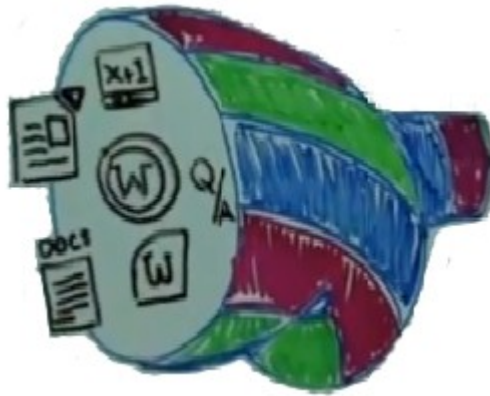
Everywhere

classes, textbooks, articles   **online, mobile, print**

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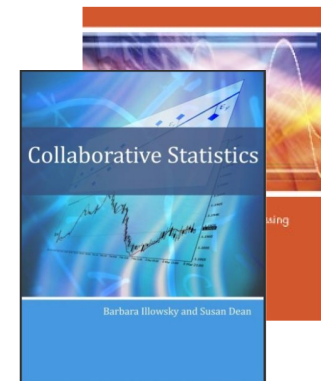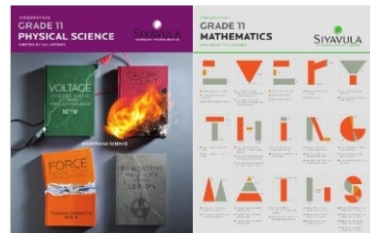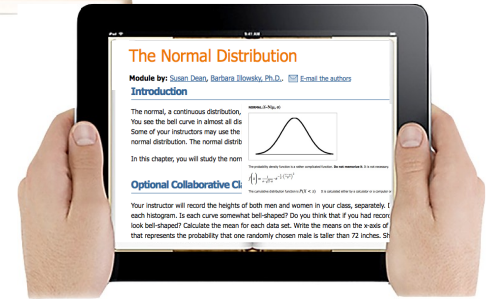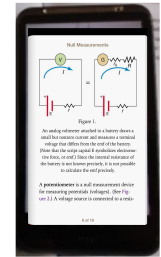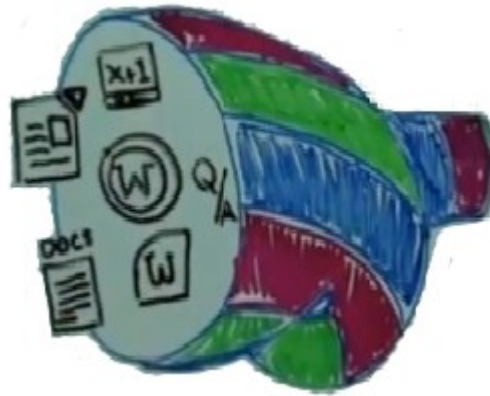
Books & courses in - flash cards out

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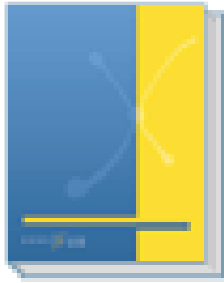
Learning content in - practice probs out

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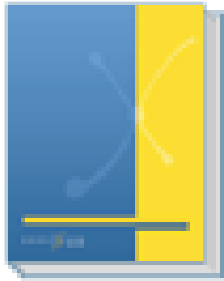
Understanding Ohm's Law

Consider the circuit which contains one resistor below.

$I = 0,1\,\text{A}$

$V = 7\text{V}$

R
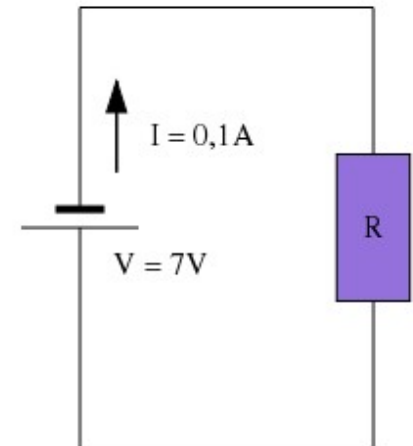
Calculate the resistance R of the resistor. Round your answer to 2 (

Answer: resistance = 70 Ω   [2/2 marks]

How? Find definitions for flash cards.

Velocity

Your notion of velocity is probably the same as its scientific definition. You know that if you have a large displacement in a small amount of time you have a large velocity, and that velocity has units of distance divided by time, such as miles per hour or kilometers per hour.

AVERAGE VELOCITY:

Average velocity is *displacement (change in position) divided by the time of travel,*

$$\overline{v} = \frac{\Delta x}{\Delta t} = \frac{x_f - x_0}{t_f - t_0} \, ,$$

(2)

where $\overline{v}$ is the *average* (indicated by the bar over the v) velocity, Δx is the change in position (or displacement), and x_f and x_0 are the final and beginning positions at times t_f and t_0, respectively. If the starting time t_0 is taken to be zero, then the average velocity is simply

How? Find learner's notes
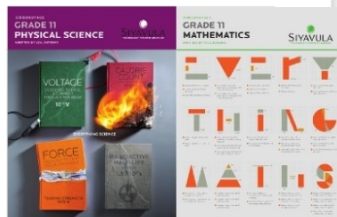
How? Find exercises and problems

Check Your Understanding
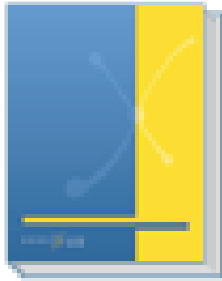
A commuter train travels from Baltimore to Washington, DC, and back in 1 hour and 45 minutes. The distance between the two stations is approximately 40 miles. What is (a) the average velocity of the train, and (b) the average speed of the train in m/s?

Solution

(a) The average velocity of the train is zero because $x_f = x_0$; the train ends up at the same place it starts.

(b) The average speed of the train is calculated below. Note that the train travels 40 miles one way and 40 miles back, for a total distance of 80 miles.

$$\frac{\text{distance}}{\text{time}} = \frac{80 \text{ miles}}{105 \text{ minutes}} \tag{5}$$

$$\frac{80 \text{ miles}}{105 \text{ minutes}} \times \frac{5280 \text{ feet}}{1 \text{ mile}} \times \frac{1 \text{ meter}}{3.28 \text{ feet}} \times \frac{1 \text{ minute}}{60 \text{ seconds}} = 20 \text{ m/s} \tag{6}$$

[Hide Solution]

What is needed to achieve the vision?

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Editor: Scientific Theories

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Drag to add a new ... | Note to reader | Activity | Exercise | Quotation | Numbered Equation | Multipart | Definition

■ **Definition**   Einstein field equation

Here is the definition.

$$\theta = x^2 + \sin y$$ (1)

General relativity

Two-dimensional analogy of spacetime distortion generated by the mass of an object. Matter changes the geometry of spacetime, this (curved) geometry being interpreted as gravity. White lines do not represent the curvature of space but instead represent the coordinate system imposed on the curved spacetime, which would be rectilinear in a flat spacetime.

In general relativity, the effects of gravitation are ascribed to spacetime curvature instead of a force. The starting point for general relativity is the equivalence principle, which equates free fall with inertial motion, and describes free-falling inertial objects as being accelerated relative to non-inertial observers on the ground.[8][9] In Newtonian physics, however, no such acceleration can occur unless at least one of the objects is being operated on by a force.

Einstein proposed that spacetime is curved by matter, and that free-falling objects are moving along locally straight paths in curved spacetime. These straight paths are called geodesics. Like Newton's first law of motion, Einstein's theory states that if a force is applied on an object, it would deviate from a geodesic. For instance, we are no longer following geodesics while standing because the mechanical resistance of the Earth exerts an upward force on us, and we are non-inertial on the ground as a result. This explains why moving along the geodesics in spacetime is considered inertial.

Einstein discovered the field equations of general relativity, which relate the presence of matter and the curvature of spacetime and are named

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Images, tables, mathematics

Principle: Mathematics editing support

Principle: drag and drop examples, exercises, notes

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📄 Siyavula: Physics Gr 12

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▾ Momentum and Impulse
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■ **Definition** **Einstein field equation**

Here is the definition.

$$\theta = x^2 + \sin y \qquad (1)$$

General relativity

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IEB Physics Outline

Siyavula: Physics Gr 12

undefined

Introduction

In Grade 10 we studied motion but not what caused the motion, in Grade 11 we learnt about forces and how they can alter the motion of an object. In this chapter we will focus on what happens when two bodies undergo a contact interaction and how their motion is affected. We learn more about how force and motion are related. We are introduced to two new concepts, momentum and impulse.

We can begin by considering some scenarios to set the context. Most people have some intuition for physics based on their everyday experiences but they haven't formalised it. We can use our intuitive answers to lead into more structured thinking about physical events.

Momentum transfer doesn't require a contact interaction but we won't consider any non-contact scenarios in this chapter.

Everyone has experienced a mosquito landing on their arm and it can happen quite unnoticed. Consider the case of a falcon landing on your arm (ignore the sharp claws for now). You would definitely notice, why? What makes a mosquito different to a falcon? Would you still notice if the mosquito flew the same way as a falcon, or if the falcon copied the flight of a mosquito before landing? You probably would still notice, but try to think about what makes them so different.

Table 1

Look at a motorcycle, motorcar and truck. Which of them is more likely to result in less damage in a collision situation, why? What factors would you change to reduce potential damage.

Table 2

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has a circular orbit. Using the equation for the circumference, C, of a circle in terms of its radius, we can determine the distance travelled by the Moon in one orbit:

$$
\begin{aligned}
C &= 2\pi r \\
&= 2\pi\left(3{,}844 \times 10^8\right) \\
&= 2{,}42 \times 10^9 \text{ m}
\end{aligned}
$$

Combining the distance travelled by the Moon in an orbit and the time taken by the Moon to complete one orbit, we can determine the magnitude of the Moon's velocity or speed,

$$
\begin{aligned}
v &= \frac{\Delta x}{\Delta t} \\
&= \frac{C}{T} \\
&= \frac{2{,}42 \times 10^9 m}{2{,}36 \times 10^6 s} \\
&= 1{,}02 \times 10^3 \text{ m·s\^{-1}}.
\end{aligned}
$$

Finally calculate the momentum and quote the answer

The magnitude of the Moon's momentum is:

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Note to reader

Activity

Exercise

Quotation

Numbered Equation

Theoretical Perspectives on Education

Functionalism Demo

Functionalists view education as one of the more important social institutions in a society. They contend that education contributes two kinds of functions: manifest (or primary) functions, which are the intended and visible functions of education; and latent (or secondary) functions, which are the hidden and unintended functions.

Manifest Functions

There are several major manifest functions associated with education. The first is socialization. Beginning in preschool and kindergarten, students are taught to practice various societal roles. The French sociologist Émile Durkheim (1858-1917), who established the academic discipline of sociology, characterized schools as "socialization agencies that teach children how to get along with others and prepare them for adult economic roles" (Durkheim 1898).

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📕 **Moby Dick**

(Back to Workspace)

- ▾ 📄 The Carpet-Bag
  - 📄 Loomings
- 📁 The Spouter-Inn.
- ▸ 📁 Breakfast.
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- 📁 The Sermon.
- 📁 A Bosom Friend.
- 📁 Epilogue
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Title: Chapter 1. Loomings

Metadata

Roles

Call me Ishmael.

Some years ago—never mind how long precisely—having little or no money in my purse, and nothing particular to in

There now is your insular city of the Manhattoes, belted round by wharves as Indian isles by coral reefs—commerce

Circumambulate the city of a dreamy Sabbath afternoon. Go from Corlears Hook to Coenties Slip, and from thence,

But look! here come more crowds, pacing straight for the water, and seemingly bound for a dive. Strange! Nothing w

Once more. Say you are in the country; in some high land of lakes. Take almost any path you please, and ten to one

But here is an artist. He desires to paint you the dreamiest, shadiest, quietest, most enchanting bit of romantic lands

Now, when I say that I am in the habit of going to sea whenever I begin to grow hazy about the eyes, and begin to be

Another adaptation: DHWriter

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