You are taking "Exam (Timed, No Correctness Feedback)" as a timed exam. Show more

End My Exam 44:40:16

Previous Next

13. A worked example

Bookmark this page

Recitation due Aug 4, 2021 20:30 IST Completed

Reflect

The setup, part 1

1/1 point (graded)

Let's consider a function $A(x, y)$ that describes the area of a rectangle of length x and width y. Note that we are considering x and y to be variables, so this is a 2-variable function. What is the function $A(x, y)$?

$A(x, y) =$ x*y

✔ **Answer:** x*y

$x \cdot y$

? INPUT HELP

Solution:

The area of a rectangle is the length x times the width y,

$$A(x, y) = xy.$$

Submit You have used 1 of 10 attempts

Answers are displayed within the problem

The setup, part 2

1/1 point (graded)

Suppose we want to take a tangent plane approximation to this function $A(x, y)$ to find the area of a rectangle with length $x = 2.1$ and width $y = 2.8$. Near which point should we take the approximation?

- $(x, y) = (0, 0)$
- $(x, y) = (2, 2)$
- $(x, y) = (2, 3)$
- I am not sure what you are asking.

✔

Solution:

This may seem like a silly question. But we would want to take the approximation at nice integer values that are easy for us to multiply. A good choice is the one that makes Δx and Δy as small as possible.

- If you choose $(x, y) = (0, 0)$, you have $\Delta x = 2.1$ and $\Delta y = 2.8$.
- If you choose $(x, y) = (2, 2)$, you have $\Delta x = 0.1$ and $\Delta y = 0.8$.
- If you choose $(x, y) = (2, 3)$, you have $\Delta x = 0.1$ and $\Delta y = -0.2$. This is the c

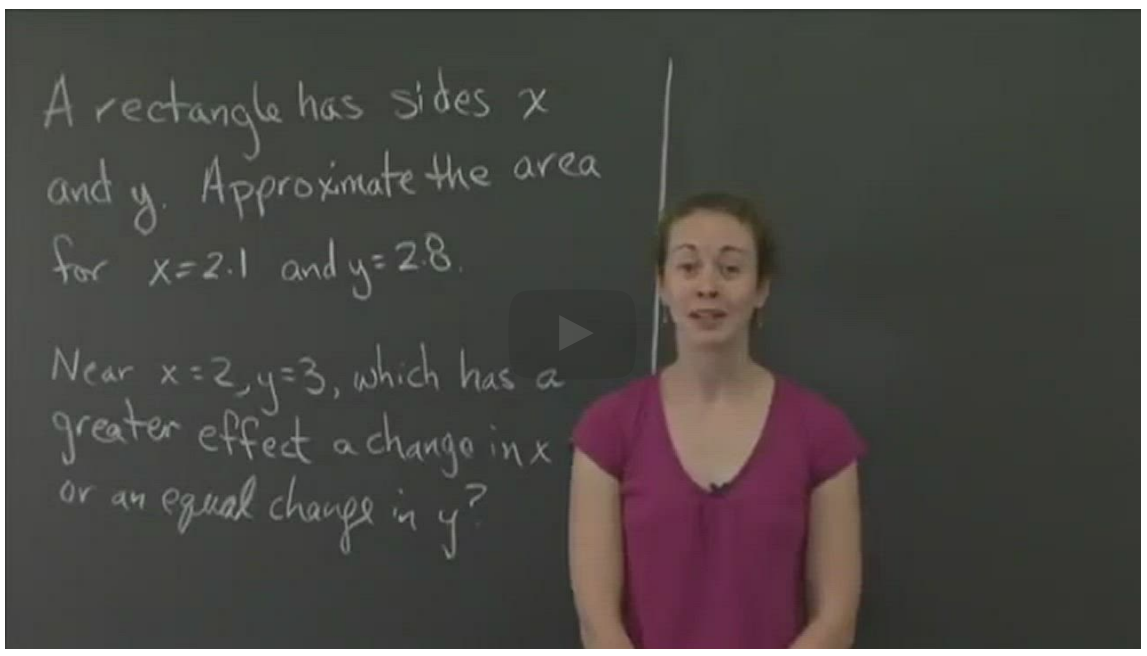
Calculator Hide Notes

Submit You have used 1 of 3 attempts

Answers are displayed within the problem

Pause the following video when prompted and try to answer the questions yourself. Then play the video and compare your answers to those provided in the video. prompted by the following video, pause and try answer the questions yourself.

A tangent approximation for area



0:00 / 0:00 2.0x

Start of transcript. Skip to the end.

PROFESSOR: Welcome back to recitation.

In this video, I'd like us to work

on the following problem that has to do with tangent planes

and approximations.

So we know that a rectangle-- we'll say a rectangle

has sides x and y.

And we know that to find the area of

Video
Download video file

Transcripts
Download SubRip (.srt) file
Download Text (.txt) file

13. A worked example

Topic: Unit 1: Functions of two variables / 13. A worked example

Hide Discussion

Add a Post

Show all posts by recent activity

clear_explanation 2
I found this small exposition very clear, especially the part where you go from extending the result obtained in two dimensions to thr...

Welcome Back To Recitation! (c) 3
I have not heard this phrase and voice for so long :)

Greater Effect? 2

Previous Next

Calculator Hide Notes

Calculator Hide Notes