Kahoot!

SUMS MATLAB Applications

1 play • 9 players

A public kahoot

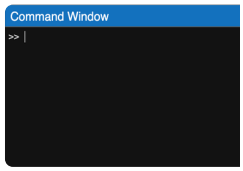
Questions (20)

1 - Slide

MATLAB Basics

2 - Quiz

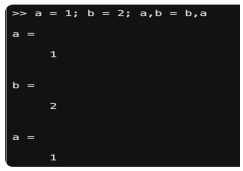
Which of the following clears the MATLAB command line?



- clc ✓
- clear ✗
- wipe ✗
- clean ✗

3 - Quiz

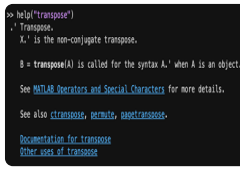
Let a=1; b=2. Run a,b = b,a = b,a = a,b. What are the values of a,b?



- a = 1, b = 1 ✗
- a = 1, b = 2 ✗
- a = 2, b = 1 ✗
- a = 2, b = 2 ✓

4 - Quiz

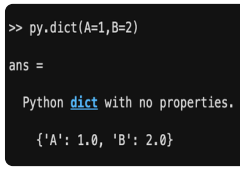
Which of the following is NOT a valid line of MATLAB code?



- T = A' ✗
- v = [1 2 3] ✗
- y = x^2x ✓
- i = 1:10:100:1000 ✗

5 - Quiz

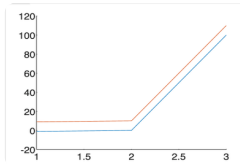
Which of the following is NOT a valid MATLAB import?



- import java.lang.String; % Java import ✗
- loadlibrary('utils', 'utils.h'); %C import ✗
- np = py.importlib.import_module('numpy'); % Python import ✗
- using CUDA.jl; % Julia import ✓

6 - Quiz

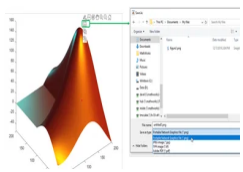
What option allows you to plot multiple functions on one graph in MATLAB?



- new_plot off; ✗
- plot(x, stack=on); ✗
- plot(x, new=off); ✗
- hold on; ✓

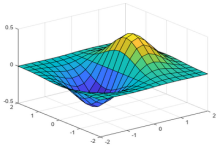
7 - Slide

Data Visualization



8 - Quiz

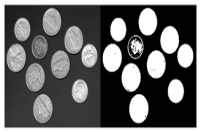
What MATLAB function can be used to create a 2D/3D coordinate grid?



- coordgrid ✗
- meshgrid ✓
- axisequal ✗
- gridxyz ✗

9 - Quiz

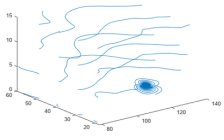
How would you create a binary image from a colored photo? We have already run img = imread('IMG.jpg');



- gray = rgb2gray(img); bin = imbinarize(gray); ✓
- color = gray2rgb(img); bin = imbinarize(color); ✗
- bin = imbinarize(img); ✗
- bin = gray2rgb(img); ✗

10 - Quiz

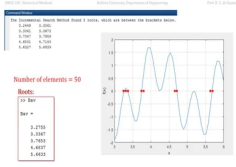
What does the streamline function do in MATLAB?



- Reduces noise in a data set ✗
- Creates a cubic spline data interpolation ✗
- Plots the streamlines of vector data ✓
- Creates streamline curve or surface to data ✗

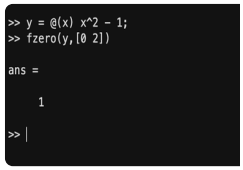
11 - Slide

Numerical Analysis



12 - Quiz

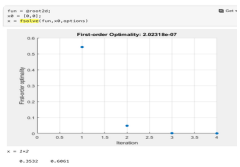
What does "fzero" do in MATLAB?



- Find zeros of **ONLY POLYNOMIALS**. ✗
- Find zeros of **ONLY SINGLE VARIABLE** functions. ✗
- Find zeros of **LINEAR AND NONLINEAR** functions. ✓
- Find zeros of **ANY** function. ✗

13 - Quiz

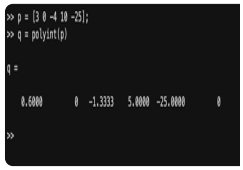
What does "fsolve" do in MATLAB?



- Finds **PRECISE** solutions to **ANY** system of equations. ✗
- Finds **APPROXIMATE** solutions to **ANY** system of equations. ✓
- Finds **APPROXIMATE** solutions to **LINEAR** system of equations. ✗
- Finds **PRECISE** solutions to **LINEAR** system of equations. ✗

14 - Quiz

What does "polyint" do in MATLAB?



- Integrates **POLYNOMIALS**. ✓
- Differentiates **POLYNOMIALS**. ✗
- Integrates **ANY FUNCTION**. ✗
- Integrates **ANY LEBESGUE INTEGRABLE FUNCTION.** ✗

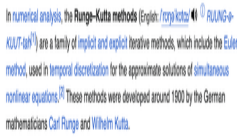
15 - Slide

Differential Equations

$$\frac{d^2y}{dt^2} - \mu(1-y^2)\frac{dy}{dt} + y = 0.$$

16 - Quiz

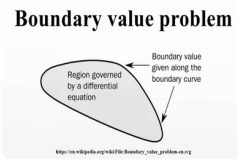
What does the 45 mean in ode45 command for solving ordinary differential equations in MATLAB?



- Solves odes to the 45th order ✗
- Stands for the runge-kutta(4,5) method ✓
- Stands for the bernoulli(4^5) method ✗
- Uses the 45 degree method ✗

17 - Quiz

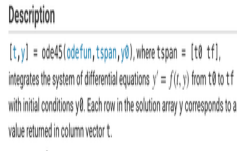
What function can be used to solve boundary value problems for ordinary differential equations?



- bvp4c ✓
- ode45 ✗
- bvp5c ✓
- ode15i ✗

18 - Quiz

What is the correct input for the ode45 function in MATLAB?



- [t,y] = ode45(tspan, y0, odefun, options) ✗
- [t,y] = ode45(odefun, tspan, t0, x0, y0, options) ✗
- [t,y] = ode45(tspan, t0, odefun, options) ✗
- [t,y] = ode45(odefun, tspan, y0, options) ✓

19 - Slide

Conclusions

20 - Quiz

Have you signed in to sums.ucsd.edu?

- Yes ✓
- Doing it right now ✓
- I will ✓
- Will do ✓

Resource credits