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I-D :-
"7209"

Subject:- Intr. to computer programming

Teacher:- Sir Ashrif Ali.

Date:- 27-06-2020.

Question #01:-
What are the basic Plots & Graphic of MATLAB ?

Ans:- The following table describes the basic Plots & graphs of MATLAB.

- Box - Axis border.
- errorbar - Plot error bars along Curve.
- hold - Retains current graph while adding new graphs.
- Line - Creates line object.
- LineSpec (Line Specification) - syntax of line Specification string.
- loglog - Log to Log Scale plot.
- Plot - 2-D Line Plot.
- Plot 3 - 3-D line plot.
- Poltyy - 2-D Plots with y-axis on both left & right side.
- Polar - Polar Corelinate plot.
- Semilogx - Semilogarithmic plot.
- Subplot - Createx axis in tiled positions.
- xlim - Sets or queries x-axis Limits.

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Question # 02:- Plot the function;

$f(x) \sin 2x$ & its derivative d/dx ,

Solution:- $\sin 2x$ on same graph

$f(x) \sin 2x.$

$$f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

$$= \lim_{h \to 0} \frac{\sin 2(x+h) - \sin 2x}{h}$$

$$= \lim_{h \to 0} \frac{\sin 2x + \cos 2h + \cos 2x \sin 2h - \sin 2x}{h}$$

$$= \lim_{h \to 0} \frac{\sin 2x \cos 2h - \sin 2x + \cos 2x \sin 2h}{h}$$

$$= \lim_{h \to 0} \frac{\sin 2x (\cos h - 1)}{h} + \frac{\cos 2x \sin 2h}{h}$$

$$= \sin 2x \lim_{h \to 0} \frac{2(\cos 2h - 1)}{2h} + \cos 2x \lim_{x \to 0} \frac{2 \sin 2h}{h}$$

$$= \sin 2x \times 2 \times 0 + \cos 2x \times 2 \times 1$$

$$= 2 \cos 2x$$

Question #03.

Part #A:- What are the memory Management function in MATLAB?

Ans:- The memory Management function in matlab are;

- Clear - Remove Variable from memory.
- Pack - Saves the existing variable to disk, & then reloads them Contiguously.
- Save - Selectively persists variables to disk.
- Load - Reloads a deta file saved with the Save function.
- Quit - Exits MATLAB & returns all allocated memory to the System. Related Content.

Question #03. Part #B.

Ans:- There are many call Sytax of dist().

I through the OP want the Euclieden distance between two points.

$(x1, y1)$, $(x2, y2)$

Which should be,

Sqrt $((x1 - x2)\hat{}2 + (y1 - y2)\hat{}2)$.

dist() can calculate the euclidean distance of multiple points at once, it can certainly be used to calculate the distance for two points although it seem to be an over-kill because the equation Sqrt $(x1 - x2)\hat{}2 + (y1 - y2)\hat{}2$ can do that too.

Since the OP asked for a MATLAB function I, through this is the one.

```
Pos = rand(2,5)
D = dist(pos).
```

```
Pos = [x1 x2 ; y1 y2]
D = diss (Pos);
```

Question # 04.

Part # A: What do you mean by M-File in MATLAB?

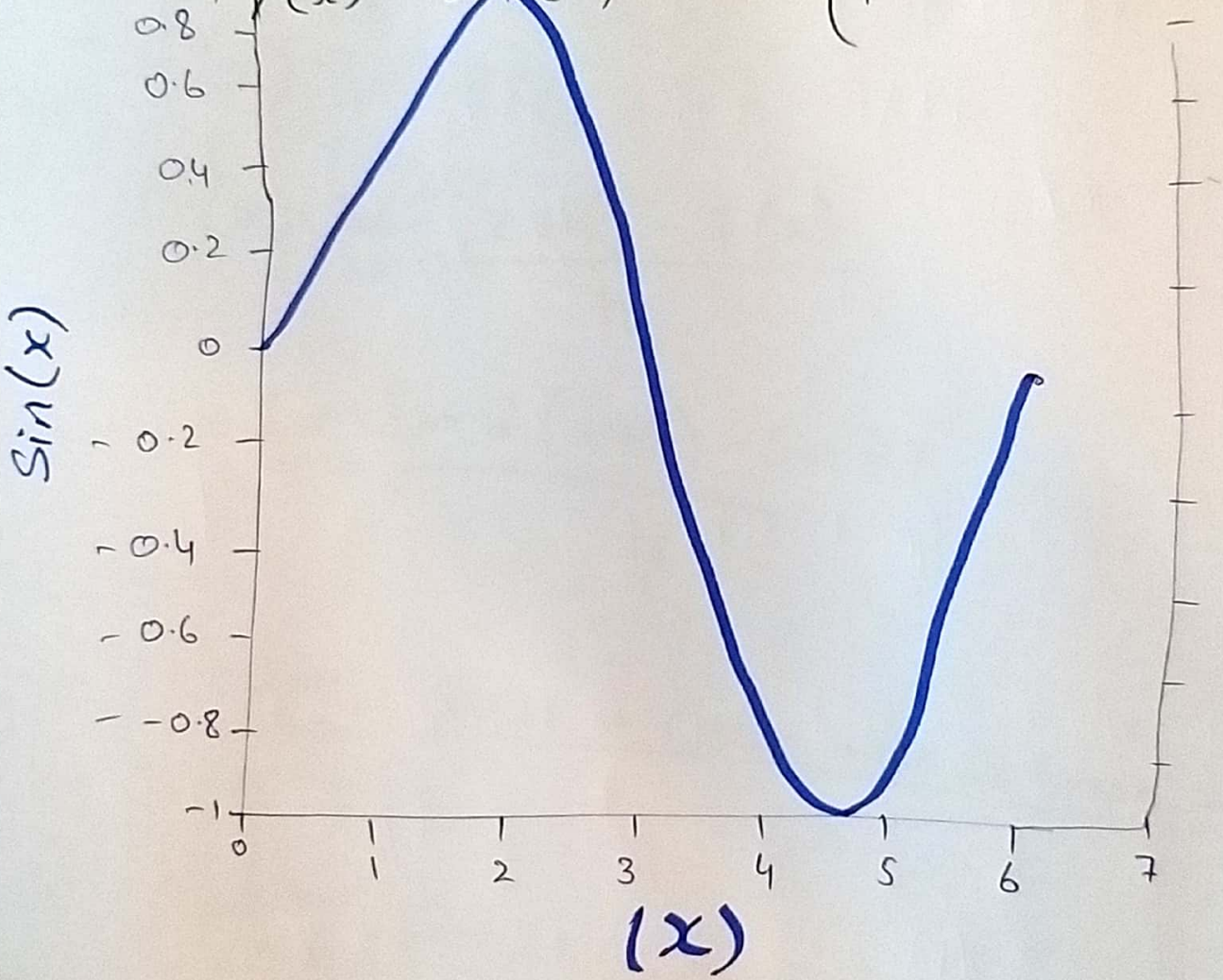
Ans:- An M-File or script file is a simple text file where you can place MATLAB commands. When the file is run, MATLAB reads the command & executes them exactly as it would if you had typed each command, sequentially at the MATLAB Prompt. All M.File names must end with the extension "M". (e-g; test 'm'). They operate on data in the workspace.

Function file are also program files with m-extension. Functions can accept inputs & return output. Interval variables are local to the function.

Question:- #1.

Part#b:- Plot the function;

$y(x) = \sin(x)$ (For $0 \leq x \leq 6$)



Plot of Sin function.

Question #4.

Part #B.

```
Fahrenheit = input ('Enter deg in F/n');
Celsius = 5*(Fahrenheit - 32)/9;
fprintf (%d Fahrenheit is %d Celsius\n
```

- Prompt user to enter temperature in degree Fahrenhite
- Read temperature in degrees Fahrenhite (temp_f)
- temp_k in kelvins <- (5/9) * (temp_f - 32) + 273.15
  write temperature in Kelvin
