* PS#1-Professor De Boer-Alejandro Castelan-Jan 24,2019

**Q#1.25: Prove whether the following functions are equal**

fix(3.5)==floor(3.5)

ans =

logical

1

>>

>> fix(3.4)==fix(-3.4)

ans =

logical

0

>>

>> fix(3.2)==floor(3.2)

ans =

logical

1

>>

>> fix(-3.2)==floor(-3.2)

ans =

logical

0

>>

>> fix(-3.2)==ceil(-3.2)

ans =

logical

1

>>

**Q#1.12: Generate random numbers between the give intervals**

>> low=0

low =

0

>> high=20

high =

20

>> rand\*(high-low)

ans =

9.4185

>>

>> low=20;

>> high=50;

>> rand\*(high-low)+low

ans =

40.9966

>>

>> randi(10)

ans =

7

>>

>> round(rand\*10)

ans =

1

>>

>> randi([50,100])

ans =

66

>>

Q#1.30: Assign values to r and theta, then using these variables, assign the corresponding rectangular coordinates to variables x and y.

>> r=4;

>> theta=54;

>> x=r\*cos(theta)

x =

-3.3172

>> y=r\*sin(theta)

y =

-2.2352

Q#2.8: using the colon operator and the linspace function create the assigned row vectors.

>> vec=-5:-1

vec =

-5 -4 -3 -2 -1

>>

>> linspace(-5,-1,5)

ans =

-5 -4 -3 -2 -1

>>

>> vec=5:2:9

vec =

5 7 9

>>

>> linspace(5,9,3)

ans =

5 7 9

>>

>> vec=8:-2:4

vec =

8 6 4

>>

>> linspace(8,4,3)

ans =

8 6 4

>>

Q#2.13: Create a 2x4 matrix. Replace first row with 1:4 and then replace third column with any desired values.

>> mat=rand(2,4)

mat =

0.1056 0.7788 0.0908 0.1537

0.6110 0.4235 0.2665 0.2810

>> mat(1,:)=1:4

mat =

1.0000 2.0000 3.0000 4.0000

0.6110 0.4235 0.2665 0.2810

>> mat(:,3)=5:6

mat =

1.0000 2.0000 5.0000 4.0000

0.6110 0.4235 6.0000 0.2810

Q#2.25: given the matrix, why would it not work to do mat (2:3,1:3)=ones(2)

>> mat=randi([120],3,5)

mat =

53 106 77 82 84

64 63 115 35 9

55 114 29 81 31

>> mat(2:3,1:3)=ones(2)

Unable to perform assignment because the size of the left side is 2-by-3 and the size of the right side is 2-by-2.

>>

Q#2.31: find the sum by creating vectors for the numerators and denominators.

>> v=[3,5,7,9]

v =

3 5 7 9

>> y=[1,2,3,4]

y =

1 2 3 4

>> v./y

ans =

3.0000 2.5000 2.3333 2.2500

>> sum(v./y)

ans =

10.0833

>>

Q#2.41: using the given values of r and h, find the volume of each trial and use logical indexing to prove all measurements are valid.

>> r=[5.499,5.498,5.5,5.5,5.52,5.51,5.5,5.48];

>> h=[11.1,11.12,11.09,11.11,11.11,11.1,11.08,11.11];

>> isg=r>0

isg =

1×8 logical array

1 1 1 1 1 1 1 1

>> isg=h>0

isg =

1×8 logical array

1 1 1 1 1 1 1 1

>> L=pi

L =

3.1416

>> T=L\*(r.^2).\*h

T =

1.0e+03 \*

1.0545 1.0560 1.0539 1.0558 1.0635 1.0587 1.0530 1.0482

>>