

Solve the following in matlab application

1) $|x - \sqrt{y}| / (a+m)$

>>abs(x-sqrt(y))/(a+m)

2) $p^{3/2} + \sqrt[5]{\frac{ab}{c}}$

>>p^(3/2)+((a*b)/c)^1/5

3) $y = \sin^3(x + nk)$

>>y=(sin(x+n*k))^3

4) $s = \tan^{-1}(y / x)$

>>S=atan(y/x)

5)Create Column vector with 5 elements

>>X=1:5

6)Create Row vector with 5 elements

X=[1:5]'

7)Maximum value

>>Max(x)

8)Minimum value

>>min(x)

9)Vector length

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>>length(x)
```

10)Dot matrix A= [1 2 3]B=[3 4 5]

Here we cannot use matrix multiply

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>>A.*B
```

11)Replace element **4** with 100 in Z=[1 2 3;**4 5 6**]

```
>>z(2,1)=100
```

12)A=[1 2;3 4] B=[1 2] find AB, 2A , pi*(B)

```
>> A*B'
```

```
>> 2*A
```

```
>>pi*B
```

13)Write z=ones(3,3) and replace diag elements with 5

```
>>z(1,1)=5
```

```
>>z(2,2)=5
```

```
>>z(3,3)=5
```

14)Random Matrix (3,3)

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>>rand(3,3)
```

15)Zeros matrix (3,3)

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>>zeros(3,3)
```

16) $Z = [1:3; 4:6; 7:9]$ find

Sum diag matrix

`>>sum(z)`

Determinate matrix

$\text{Det}(z)$

Invers matrix

`>>inv(z)`

H.W

Chemical reaction rates are proportional to a rate constant k that changes

with temperature according to the Arrhenius equation

$$k = k_0 * e^{(-Q/(R*T))}$$

For a certain reaction,

$$Q = 8000 \text{ cal/mol}$$

$$R = 1.987 \text{ cal/mol K}$$

$$k_0 = 1200 \text{ min}^{-1}$$

T=100 to 500 in 50 increments.

Find the values of k for temperatures from 100 K to 500 K, in 50 increments.

Create a table of your results.