

Question 1

$$2^5/(2^5-1) \text{ and compare with } [1-(1/2^5)]-1$$

$$2^5/(2^5-1)$$

$$\text{ans} = 1.0323$$

$$[1-(1/2^5)]-1$$

$$\text{ans} = -0.0313$$

Question 2

$$[3(\sqrt{5}-1)/(\sqrt{5}+1)*2] - 1$$

$$[3*(\text{sqrt}(5)-1)/(\text{sqrt}(5)+1)*2]-1$$

$$\text{ans} = 1.2918$$

Question 3

$$\text{Area} = \pi r^2 \text{ with } r=\pi^{1/3}-1$$

$$r = \pi^{(1/3)}-1$$

$$r = 0.4646$$

$$\text{Area} = \pi * r^2$$

$$\text{Area} = 0.6781$$

Question 4

$$e^3, \ln(e^3), \log_{10}(e^3), \log_{10}(10^5)$$

$$\exp(3)$$

$$\text{ans} = 20.0855$$

$$\log(\exp(3))$$

$$\text{ans} = 3$$

$$\log_{10}(\exp(3))$$

$$\text{ans} = 1.3029$$

```
log10(10^5)
```

```
ans = 5
```

Question 5

$$e^{\pi\sqrt{163}}, \sin(2\pi/6) + \cos(2\pi/6)$$

```
exp(pi*sqrt(163))
```

```
ans = 2.6254e+17
```

```
sin((2*pi)/6)+cos((2*pi)/6)
```

```
ans = 1.3660
```

Question 6

$$y = \cosh 2x - \sinh 2x; \text{ where } x = 32\pi$$

```
x = 32*pi
```

```
x = 100.5310
```

```
y = cosh(2*x) - sinh(2*x)
```

```
y = 0
```

Question 7

$$\text{Solve } 3^x = 17 \text{ for } x$$

```
x = log(17)/log(3)
```

```
x = 2.5789
```

Question 8

$$1 + (3i/(1-3i)), e^{i\pi/4}$$

```
1+(3*i/(1-(3*i)))
```

```
ans = 0.1000 + 0.3000i
```

```
exp((i*pi)/4)
```

```
ans = 0.7071 + 0.7071i
```

Question 9

Execute the commands $\exp(\pi/2*i)$ and $\exp(\pi/2i)$.

```
exp(pi/2*i)
```

```
ans = 0.0000 + 1.0000i
```

```
exp(pi/2i)
```

```
ans = 0.0000 - 1.0000i
```

Question 10

$\cot(0)$, $\tan^{-1}(\infty)$

```
cot(0)
```

```
ans = Inf
```

```
(tan(inf))^-1
```

```
ans = NaN
```