VIT UNIVERSITY

APPLICATIONS OF DIFFERENTIAL EQUATIONS

MAT2002

experiment-8

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1. Write a MATLAB code to find the Z-Transform of

$$\sin n\frac{\pi}{2} + \cos n\frac{\pi}{2}$$

   and execute it.

CODE:

```
syms z n ;
ztrans(sin(n*pi/2)+cos(n*pi/2))
```

OUTPUT:

```
ztrans
ans =
z/(z^2 + 1) + z^2/(z^2 + 1)
```

```
>> ztrans

ans =

z/(z^2 + 1) + z^2/(z^2 + 1)
```

continued...

2. Write a MATLAB code to find the inverse Z-Transform of

$$\frac{z}{z+2} + \frac{z}{z-1}$$

and execute it.

CODE:

```
clc
syms z n ;
iztrans((z/(z+2)+(z/(z-1))))
```

OUTPUT:

ans =

$(-2)^n + 1$

ans =

$(-2)^n + 1$