**Acheev Bhagat**

**MATLAB 2**

Problem 1:

DCT =

4.4409e-16

ECINV =

7.4607e-14

The resulting values are incredibly small so the values should be equal.

Problem 2:

INVDIFF =

1.2790e-13

The resulting value is incredibly small so the values should be equal.

Problem 3:

xDIFF =

6.6613e-16

The resulting value is incredibly small so the values should be equal.

Problem 4:

det(AB) = det(A)det(B) : holds

-8.6736e-19

det(A + B) = det(A) + det(B) : doesn't hold

-0.2313

det(A^-1) = 1 / det(A) : holds

2.1316e-14

det([A 0; 0 B]) = det(A) \* det(B) : doesn't hold

17.6884

Problem 5:

Iteration 1

TA =

-1.2982e-19

AT =

0.0175

Iteration 2

TA =

2.5904e-19

AT =

0.0034

Iteration 3

TA =

9.1655e-20

AT =

0.0013

Iteration 4

TA =

3.6611e-19

AT =

0.0047

Iteration 5

TA =

-6.3011e-20

AT =

0.0028

When A is a reactangular matrix with more columns than rows, A' \* A will

have a determinant of 0 and will not be invertible whereas A \* A' will not

and will be invertible.

Problem 6:

detA =

1

detB =

1

detC =

1

The determinant of the nxn matrix would be 1.

Problem 7:

detU =

1

detUT =

47.3300

detUdetUT =

8.0021e+26