In-class Practice A7: Lines in Graphics

1. Give MATLAB code that will generate the plot below (where all line-segments have the same length and are either horizontal or vertical).

```matlab
points = [ 0 0; 1 0; 1 1; 2 1; 2 0; 3 0 ];
plot( points(:,1), points(:,2) );
```

2. Given points \((a, b)\) and \((c, d)\) in the plane, give MATLAB code for

(a) the distance between them

(b) the angle going from \((a, b)\) to \((c, d)\)

```matlab
pdist( [ [a b] ; [c d] ] )
atan2d( d-b, c-a )
```

3. Given points \(A\) and \(B\), give MATLAB code to generate points \(U\), \(V\) and \(W\) in the following diagram. Each line-segment has the same length and angles \(AUV\) and \(VWB\) are 120 deg.

```matlab
A -> U
  \(V\)
    \(W\)
      \(B\)
```