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% ECE 4560 - Homework 5, Problem 4
% Caitlyn Caggia
```

```
%part a
```

```
za = [4 6 pi/12];
J = [0 -1; 1 0];
zahat = [J*pi/12 [4;6]; 0 0 0]
```

```
%part b
```

```
zbhat = [0      -pi/8    7;
         pi/8    0      -3;
         0      0      0];
x = zbhat(1,3);
y = zbhat(2,3);
w = zbhat(2,1);
zb = [x y w]
```

```
%part c
```

```
zc = [1 -9 3 1 -0.8 -0.5];
x = zc(1); y = zc(2); z = zc(3);
w1 = zc(4); w2 = zc(5); w3 = zc(6);
what = [0 -w3 w2;
        w3 0 -w1;
        -w2 w1 0];
zchat = [what [x;y;z]; 0 0 0 0]
```

```
%part d
```

```
zdhat = [0   -0.9  -0.1   3;
         0.9   0   -0.2  -2;
         0.1  0.2   0     1;
         0    0    0     0];
x = zdhat(1,4); y = zdhat(2,4); z = zdhat(3,4);
w1 = zdhat(3,2); w2 = zdhat(1,3); w3 = zdhat(2,1);
zd = [x y z w1 w2 w3]
```

```
zahat =
```

```
      0   -0.2618    4.0000
0.2618      0    6.0000
      0      0      0
```

```
zb =
```

```
7.0000   -3.0000    0.3927
```

```
zchat =
```

```
      0    0.5000   -0.8000    1.0000
-0.5000      0   -1.0000   -9.0000
```

0.8000	1.0000	0	3.0000
0	0	0	0

$z\bar{d} =$

3.0000	-2.0000	1.0000	0.2000	-0.1000	0.9000
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