

Problem #0.22

By: Ian Doarn Class: EECE 3203

```
syms t

x = (1 + 1j*t)^2;

real_x = real(x)
imaginary_x = imag(x)

% nothing happens when x is plotted with fplot
fplot(x);

% this gives the following error:
% Error using plot
% Data must be numeric, datetime, duration or an array convertible to double.
% plot(x);

deriv = diff(x)

real_deriv = real(deriv)
imag_deriv = imag(deriv)

fplot(real_deriv, imag_deriv, 'g*')

x2 = @(T) (1 + 1j*T).^2;

int_x = integral(x2, 0, 1)

conj_x = @(T) conj((1 + 1j*T).^2);

int_conj_x = integral(conj_x, 0, 1)

if real(int_x) == real(int_conj_x)
    disp('True, int_x == int_conj_x')
end
```

```
real_x =

real((1 + t*1i)^2)

imaginary_x =

imag((1 + t*1i)^2)

deriv =

- 2*t + 2i

real_deriv =
```

```
-2*real(t)
```

```
imag_deriv =
```

```
2 - 2*imag(t)
```

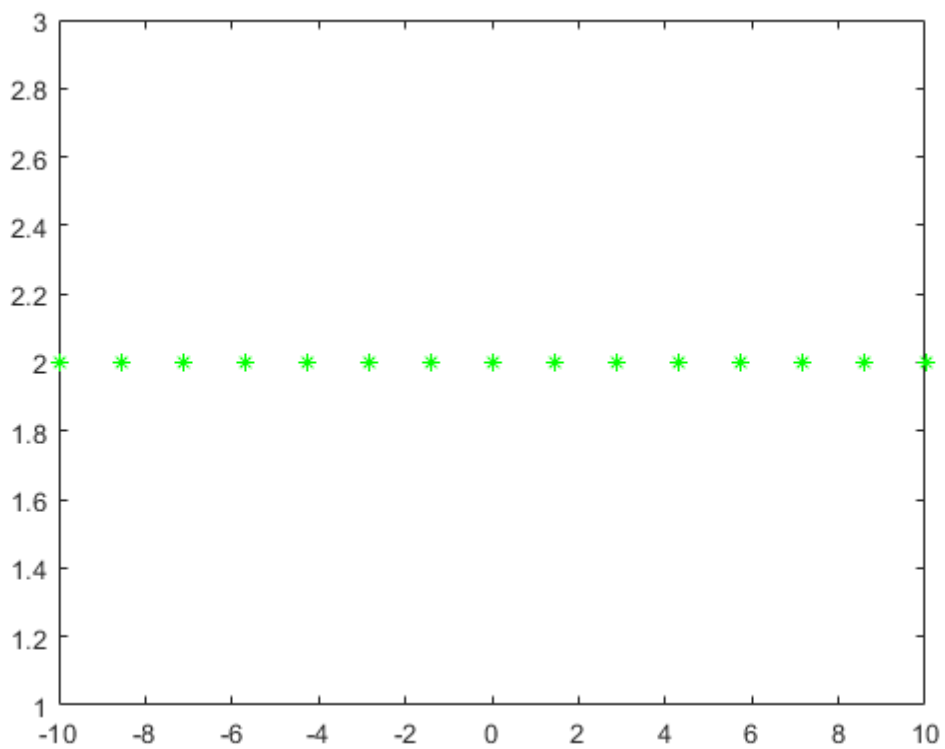
```
int_x =
```

```
0.6667 + 1.0000i
```

```
int_conj_x =
```

```
0.6667 - 1.0000i
```

```
True, int_x == int_conj_x
```



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