ET 3. $x = 5i$ $x = -5i$

Alg 2
Ch. 5

Trig 9.5

Add, subtract, multiply, divide complex numbers in rectangular form
Write equations with complex roots

real number

imaginary number

complex number

i

terms

like terms

FOIL (boo) EWE :)

iteration

conjugate pairs

whiteboards

29

WB 9.5
+ p583 28, ~~29~~, 39
a.
b. (3)

35.

$$\frac{(1+i)^2}{(-3+2i)^2} = \frac{2i}{5-12i} \cdot \frac{(5+12i)}{5+12i} \qquad \frac{-24+10i}{169}$$

$$= \frac{10i + 24ii}{25-144ii} = \frac{-24+10i}{169}$$

$$\frac{1+i}{1+i} \quad \frac{-3+2i}{-3+2i}$$

$$1 \; i+i \; i \quad +9 \; -6i \; -6i \; +4ii$$

$$-\frac{24}{169} + \frac{10i}{169}$$

Simplify

1. $i^{10} + i^{25}$
2. $(2 + 3i) - (4 - 4i)$
3. $(2 + 7i) + (-3 - i)$
4. $i^3(4 - 3i)$
5. $(i - 7)(-i + 7)$
6. $\frac{4 + 2i}{5 - 2i}$
7. $\frac{5 + i}{1 - \sqrt{2}i}$

$x^2+5x+6=0$

$(x+3)(x+2)=0$

$x+3=0 \quad x+2=0$

Write equations with complex roots(work backwards)

$x=-3 \quad x=-2$

x=3 x=-2

$x^2-x-6=0$

$(x-3)(x+2)=0$

$x=3 \quad x=-2$

$x^2-x-6=0$

x=2i x=-2i

$x^2+4=0$

$x-2i$

$x+2i$

$x^2-4i+2i-4i^2$

$(x-2i)(x+2i)=0$

$x-2i=0 \quad x+2i=0$

x=1+2i x=1-2i

$y = x^2 - 2x + 5$

$= 0$

$(x-1-2i)(x-1+2i) = 0$

$x-1-2i = 0 \quad x-1+2i = 0$

$x = 1+2i \quad x = 1-2i$

$x-1-2i$

$x-1+2i$

$2ix \quad -2i \quad -4ii$

$-x \quad +1 \quad +2i$

4

$x^2 - x - 2ix$

$x^2 - 1$

$x^2 - 2x + 5 = 0$