Notes #6 Dividing Complex #s

has nothing to do with division...

$\frac{1}{2}$ $\div$ fraction

★ you cannot have a $\sqrt{\ }$ in the denominator

$\frac{5}{1+2\sqrt{-1}}$

Ex 1.

$\frac{5}{1+2i} \cdot \frac{1-2i}{1-2i}$

② put the same thing on top.

① fixing the bottom. * change sign of imaginary term.

multiply ACROSS

$\frac{5}{(1+2i)} \cdot \frac{(1-2i)}{(1-2i)} = \frac{5-10i}{5}$

should have just a # on bottom

$1(1-2i) + 2i(1-2i)$

$1 - 2i + 2i - 4i^2$ ★ $-4 \cdot -1$

should cancel

$+4$

$\frac{5}{1}$

★ could simplify

$\frac{1-2i}{1}$

Ex 2. $\frac{6i}{3-8i} \cdot \frac{3+8i}{3+8i}$ same

change

★issue is bottom fix by changing sign w/ i

$\frac{6i}{(3-8i)} \cdot \frac{(3+8i)}{(3+8i)} =$

$3(3+8i) \quad -8i(3+8i)$

$9 \quad +24i \quad -24i \quad -64i^2$★

Should cancel

$9 \quad +64$

73

$18i \quad +48i^2$★ $= 18i - 48 = \frac{-48+18i}{73}$

try this:

$$\frac{5}{7+3i} \cdot \frac{7-3i}{7-3i} = \frac{35-15i}{58}$$

$49 - 21i + 21i - 9i^2$

$49 \qquad +9$

125
98
40

45
136
80