Key

2.6 Complex Numbers Day 2

Simplify.

i^2 -1 i^3 $-i$ i^4 1

$(3+8i)(-2-i)$ $-8(-1)=+8$

$-6-3i-16i-8i^2$

$\boxed{2-19i}$

$(8-2i)^2$

$(8-2i)(8-2i)$

$64-16i-16i+4i^2$

$\boxed{60-32i}$

$(4i)(-2i)(-5-4i)$

$-8i^2 = 8(-5-4i)$

$\boxed{-40-32i}$

$(7-2i)(6-4i)$

$42-28i-12i+8i^2$

$\boxed{34-40i}$

$\frac{-4}{-5i} \cdot \frac{i}{i} = \frac{-4i}{-5i^2} = \boxed{\frac{-4i}{5}}$

$\frac{-7+6i}{7-10i} \cdot \frac{7+10i}{7+10i} = \frac{-49-70i+42i+60i^2}{49+70i-70i-100i^2}$

$\boxed{\frac{-109-28i}{149}}$

$\frac{-1+3i}{-4-8i} \cdot \frac{-4+8i}{-4+8i} = \frac{4-8i-12i+24i^2}{16-32i+32i-64i^2}$

$= \frac{20-20i}{80} = \boxed{\frac{1-i}{4}}$

$\frac{-4+3i}{-10+7i} \cdot \frac{-10-7i}{-10-7i} = \frac{40+28i-30i-21i^2}{100+70i-70i-49i^2}$

$= \boxed{\frac{61-2i}{149}}$