MATH 1314
Chapter 1.3: Complex Numbers

SOLVE FOR X.

$x^2 = 25$ $\qquad$ $x^2 = -25$

THE IMAGINARY NUMBER i

WRITE EACH EXPRESSION IN TERMS OF i.

$\sqrt{-4}$ $\qquad$ $\sqrt{-12}$ $\qquad$ $\sqrt{-13}$

SIMPLIFY.

$\sqrt{-9} \cdot \sqrt{-25}$ $\qquad$ $\sqrt{-15} \cdot \sqrt{-3}$ $\qquad$ $\dfrac{\sqrt{-50}}{\sqrt{-2}}$

Complex Number: $a+bi$

Simplify each expression to $a+bi$.

$3-\sqrt{-100}$ $\qquad$ $\dfrac{2+7i}{5}$ $\qquad$ $\dfrac{-6+\sqrt{-18}}{9}$

Powers of i

$i^1 =$

$i^2 =$

$i^3 =$

$i^4 =$

$i^5 =$

$i^6 =$

$i^7 =$

$i^8 =$

Simplify.

i^{48} $\qquad$ i^{23} $\qquad$ i^{50} $\qquad$ i^{-19}

Simplify.

$(-2-4i)+(5+2i)-(3-6i)$

$\left(\frac{3}{4}+\frac{9}{5}i\right)-\left(\frac{1}{2}+\frac{2}{3}i\right)$

$-\frac{1}{2}i\,(4+6i)$

$(-2+6i)(4-3i)$

$(3+4i)^2$

$(5+2i)(5-2i)$

$(a+bi)(a-bi)$

Simplify.

$\dfrac{8+2i}{3-5i}$

$(2+\sqrt{3}i)^{-1}$

$\dfrac{-2}{5i}$