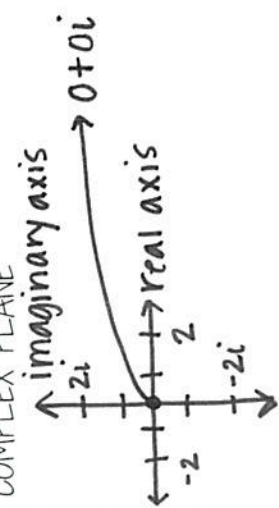
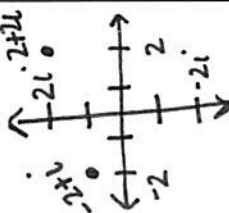


| | | |
|---|---|---|
| <p>COMPLEX PLANE</p>  <p>↑ imaginary axis → real axis</p> <p>Graph each complex number.</p> <p>(a) $-2+i$ (b) $2+2i$</p>  | <p>ABSOLUTE VALUE OF A COMPLEX NUMBER</p> <p>$a+bi = \sqrt{a^2+b^2}$</p> <p>Find each absolute value</p> <p>(a) $-9+i$ (b) $-4i$</p> <p>$\sqrt{(-9)^2+(1)^2}$ $\sqrt{(0)^2+(-4)^2}$</p> <p>$\sqrt{81+1}$ $\sqrt{0+16}$</p> <p>$\sqrt{82}$ $\sqrt{16}$</p> <p>$\boxed{\sqrt{82}}$ $\boxed{4}$</p> | <p>ADDING/SUBTRACTING</p> <ul style="list-style-type: none"> • add like terms • real w/ real • imaginary w/ imaginary <p>Add or subtract. Write result in the form of $a+bi$.</p> <p>(a) $(-2+4i)+(3-11i)$</p> <p>$\boxed{1-7i}$</p> <p>(b) $(4-i)-(5+8i)$</p> <p>$(4-i)+(-5-8i) = \boxed{-1-9i}$</p> |
| <p>5.9 Operations with Complex Numbers</p> | | |
| <p>$i^2 = -1$</p> <p>(a) $2i(3-5i)$ (b) $(5-6i)(4-3i)$</p> <p>$6i - 10i^2$ $20 - 15i - 24i + 18i^2$</p> <p>$6i - 10(-1)$ $20 - 39i - 18$</p> <p>$6i + 10$ $\boxed{2-39i}$</p> <p>$\boxed{10+6i}$</p> <p>MULTIPLYING</p> | <p>POWERS OF i</p> <p>$i^4 = 1$ $i^3 = -i$ $i^2 = -1$ $i^1 = i$</p> <p>(a) $-3i^{12}$ (b) i^{25}</p> <p>$-3(i^2)^6$ $i^1 \cdot i^{24}$</p> <p>$-3(-1)^6$ $i \cdot (i^2)^{12}$</p> <p>$-3(1)$ $i(-1)^{12}$</p> <p>$\boxed{-3}$ $i(1)$</p> <p>\boxed{i}</p> | <p>• multiply by complex conjugate</p> <p>(a) $\frac{3+7i}{8i} \cdot \frac{-8i}{-8i} = \frac{-24i-56i^2}{-64i^2}$</p> <p>$= \frac{-24i-56(-1)}{64} = \frac{24i+56}{64}$</p> <p>$= \frac{56+24i}{64}$</p> <p>$= \frac{7-3i}{8}$</p> <p>RATIONALIZING THE DENOMINATOR</p> |