Two complex numbers in the form **a + bi** and **a – bi** are called complex conjuates. The product of two conjugates is always a real number.

The Complex Numbers ($\mathbb{C}$)

Consider the number $\mathbf{5+2i}$. Because 5 is a real number and $2i$ is a pure imaginary number, they are not like terms and can not be combined. This type of expression is called a **complex number.**

Standard Form of a Complex Number:

conjugate:

Dividing Complex Numbers

***Watch out!** "i" can not be in the denominator of a complex number.

- **If the denominator is a monomial**: Multiply top and bottom by "i"
- **If the denominator is a binomial**: Multiply top and bottom by the conjugate.

13. $\dfrac{i}{2-6i}$

14. $\dfrac{6i}{1-i}$

15. $\dfrac{4+10i}{3+i}$

16. $\dfrac{5-8i}{-1-4i}$

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

18. $\dfrac{5i}{6+2i}$

19. $\dfrac{-5+5i}{1-3i}$

20. $\dfrac{7+3i}{2+i}$

21. $\dfrac{1+8i}{2-4i}$