Exercise 32

For the following exercises, perform the indicated operation and express the result as a simplified complex number.

$$\frac{-5+3i}{2i}$$

Solution

Start by making the denominator real. Then use the distributive property.

$$\frac{-5+3i}{2i}$$

$$\frac{-5+3i}{2i} \times \frac{i}{i}$$

$$\frac{(-5+3i)i}{2i^2}$$

$$\frac{-5i+3i^2}{2i^2}$$

$$\frac{-5i+3(-1)}{2(-1)}$$

$$\frac{(-1)(5i+3)}{2(-1)}$$

$$\frac{5i+3}{2}$$

$$\frac{5}{2}i+\frac{3}{2}$$

$$\frac{3}{2}+\frac{5}{2}i$$