

Exercise 37

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

$$\sqrt{-9} + 3\sqrt{-16}$$

Solution

Use the fact that $i = \sqrt{-1}$.

$$\sqrt{-9} + 3\sqrt{-16}$$

$$\sqrt{9(-1)} + 3\sqrt{16(-1)}$$

$$\sqrt{9}\sqrt{-1} + 3\sqrt{16}\sqrt{-1}$$

$$3i + 3(4)i$$

$$3i + 12i$$

$$15i$$