

**Exercise 33**

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

$$\frac{6 + 4i}{i}$$

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**Solution**

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

$$\begin{aligned} & \frac{6 + 4i}{i} \\ & \frac{6 + 4i}{i} \times \frac{i}{i} \\ & \frac{(6 + 4i)i}{i^2} \\ & \frac{6i + 4i^2}{i^2} \\ & \frac{6i + 4(-1)}{-1} \\ & \frac{6i - 4}{-1} \\ & \frac{6}{-1}i - \frac{4}{-1} \\ & (-6)i - (-4) \\ & -6i + 4 \\ & 4 - 6i \end{aligned}$$