

## 8.8

$$\begin{aligned} 1) \quad & 3 - (-8 + 4i) \\ & 3 + 8 - 4i \\ & 11 - 4i \end{aligned}$$

$$\begin{aligned} 3) \quad & 7i - (3 - 2i) \\ & 7i - 3 + 2i \\ & -3 + 9i \end{aligned}$$

$$\begin{aligned} 5) \quad & -6i - (3 + 7i) \\ & -6i - 3 - 7i \\ & -3 - 13i \end{aligned}$$

$$\begin{aligned} 7) \quad & (3 - 3i) + (-7 - 8i) \\ & 3 - 3i - 7 - 8i \\ & -4 - 11i \end{aligned}$$

$$\begin{aligned} 9) \quad & i - (2 + 3i) - 6 \\ & i - 2 - 3i - 6 \\ & -8 - 2i \end{aligned}$$

$$\begin{aligned} 11) \quad & (6i)(-8i) \\ & -48i^2 \\ & -48(-1) \\ & 48 \end{aligned}$$

$$\begin{aligned} 13) \quad & (-5i)(8i) \\ & -40i^2 \\ & -40(-1) \\ & 40 \end{aligned}$$

$$\begin{aligned} 15) \quad & (-7i)^2 \\ & 49i^2 \\ & 49(-1) \\ & -49 \end{aligned}$$

$$\begin{aligned} 17) \quad & (6 + 5i)^2 \\ & 36 + 60i + 25i^2 \\ & 36 + 60i + 25(-1) \\ & 36 + 60i - 25 \\ & 11 + 60i \end{aligned}$$

$$\begin{aligned} 19) \quad & (-7 - 4i)(-8 + 6i) \\ & 56 - 42i + 32i - 24i^2 \\ & 56 - 42i + 32i - 24(-1) \\ & 56 - 42i + 32i + 24 \\ & 80 - 10i \end{aligned}$$

$$\begin{aligned} 21) \quad & (-4 + 5i)(2 - 7i) \\ & -8 + 28i + 10i - 35i^2 \\ & -8 + 28i + 10i - 35(-1) \\ & -8 + 28i + 10i + 35 \\ & 27 + 38i \end{aligned}$$

$$\begin{aligned} 23) \quad & (-8 - 6i)(-4 + 2i) \\ & 32 - 16i + 24i - 12i^2 \\ & 32 - 16i + 24i - 12(-1) \\ & 32 - 16i + 24i + 12 \\ & 44 + 8i \end{aligned}$$

$$\begin{aligned} 25) \quad & (1 + 5i)(2 + i) \\ & 2 + i + 10i + 5i^2 \\ & 2 + i + 10i + 5(-1) \\ & 2 + i + 10i - 5 \\ & -3 + 11i \end{aligned}$$

$$27) \quad \frac{(-9+5i)(i)}{i(i)} = \frac{-9i+5i^2}{i^2} = \frac{-9i+5(-1)}{-1} = \frac{-9i-5}{-1} = 9i + 5$$

$$29) \quad \frac{(-10-9i)(i)}{6i(i)} = \frac{-10i-9i^2}{6i^2} = \frac{-10i-9(-1)}{6(-1)} = \frac{-10i+9}{-6}$$

$$31) \quad \frac{(-3-6i)(i)}{4i(i)} = \frac{-3i-6i^2}{4i^2} = \frac{-3i-6(-1)}{4(-1)} = \frac{-3i+6}{-4}$$

$$33) \quad \frac{(10-i)(i)}{-i(i)} = \frac{10i-i^2}{-i^2} = \frac{10i-(-1)}{-(-1)} = \frac{10i+1}{1} = 10i + 1$$

$$35) \frac{4i(-10-i)}{-10+i(-10-i)} = \frac{-40i-4i^2}{100-i^2} = \frac{-40i-4(-1)}{100-(-1)} = \frac{-40i+4}{100+1} = \frac{-40i+4}{101}$$

$$37) \frac{8(7+6i)}{7-6i(7+6i)} = \frac{56+48i}{49-36i^2} = \frac{56+48i}{49-36(-1)} = \frac{56+48i}{49+36} = \frac{56+48i}{85}$$

$$39) \frac{7(10+7i)}{10-7i(10+7i)} = \frac{70+49i}{100-49i^2} = \frac{70+49i}{100-49(-1)} = \frac{70+49i}{100+49} = \frac{70+49i}{149}$$

$$41) \frac{5i(-6+i)}{-6-i(-6+i)} = \frac{-30i+5i^2}{36-i^2} = \frac{-30i+5(-1)}{36-1(-1)} = \frac{-30i+5(-1)}{36-1(-1)} = \frac{-30i-5}{36+1} = \frac{-30i-5}{37}$$

$$43) \sqrt{-81}$$

$$\sqrt{-1 \cdot 3^2}$$

$$3^2 i$$

$$9i$$

$$45) \sqrt{-10} \sqrt{-2}$$

$$\sqrt{-1 \cdot 10} \sqrt{-1 \cdot 2}$$

$$i\sqrt{10} \cdot i\sqrt{2}$$

$$i^2 \sqrt{20}$$

$$-1\sqrt{2^2 \cdot 5}$$

$$-1 \cdot 2\sqrt{5}$$

$$-2\sqrt{5}$$

$$47) \frac{3+\sqrt{-27}}{6} = \frac{3+\sqrt{-1 \cdot 3^3}}{6} = \frac{3+3i\sqrt{3}}{6} = \frac{3(1+i\sqrt{3})}{6} = \frac{1+i\sqrt{3}}{2}$$

$$49) \frac{8-\sqrt{-16}}{4} = \frac{8-\sqrt{-1 \cdot 2^4}}{4} = \frac{8-2^2 i}{4} = \frac{8-4i}{4} = \frac{4(2-i)}{4} = 2-i$$

$$51) i^{73} = i^1 = i$$

$$53) i^{48} = i^0 = 1$$

$$55) i^{62} = i^2 = -1$$

$$57) i^{154} = i^2 = -1$$