

### Solution to Practice 3a

$$\mathbf{B1(a)} \quad (3 + 4i) + (1 + 5i) = (3 + 1) + (4 + 5)i = 4 + 9i$$

$$\mathbf{B1(b)} \quad (3 - 2i) + (-7 + 6i) = (3 - 7) + (-2 + 6)i = -4 + 4i$$

$$\mathbf{B1(c)} \quad (-5 + 7i) - (2 + 6i) = (-5 - 2) + (7 - 6)i = -7 + i$$

$$\mathbf{B1(d)} \quad (-7 - 2i) - (-8 - 9i) = (-7 + 8) + (-2 + 9)i = 1 + 7i$$

$$\begin{aligned} \mathbf{B2(a)} \quad (2 + i)(5 - 3i) &= 1 - 6i + 5i - 3i^2 \\ &= (10 + 3) + (-6 - 5)i \\ &= 13 - i \end{aligned}$$

$$\begin{aligned} \mathbf{B2(b)} \quad (-3 - 2i)(5 - 2i) &= -15 + 6i - 10i + 4i^2 \\ &= (-15 - 4) + (6 - 10)i \\ &= -19 - 4i \end{aligned}$$

$$\begin{aligned} \mathbf{B2(c)} \quad (3 - 5i)(-1 + 6i) &= -3 + 18i + 6i - 30i^2 \\ &= (-3 + 30) + (18 + 6)i \\ &= 27 + 24i \end{aligned}$$

$$\begin{aligned} \mathbf{B2(d)} \quad (-3 - i)(3 - i) &= -9 + 3i - 3i + i^2 \\ &= (-9 - 1) + (3 - 3)i \\ &= -10 \end{aligned}$$