## A.7.5

**a**

$$\bar{z} = 2 - 3i$$
$$\bar{w} = 1 - 6i$$

$$\begin{aligned} z\bar{w} &= \bar{z}\bar{w} \\ &= (2-3i)(1-6i) \\ &= 2 - 12i - 3i + 18(i^2) \\ &= 2 - 15i - 18 \\ &= -16 - 15i \end{aligned}$$

**b**

$$\begin{aligned} z \bar{+} w &= \bar{z} + \bar{w} \\ &= (2-3i) + (1-6i) \\ &= 2 - 3i + 1 - 6i \\ &= 3 - 9i \end{aligned}$$

**c**

$$\begin{aligned} z \bar{/} w &= \bar{z}/\bar{w} \\ &= (2-3i)/(1-6i) \\ &= \frac{1 \cdot 2 + (-6)(-3)}{1^2 + (-6)^2} + i\frac{(-6)2 - 1(-3)}{1^2 + (-6)^2} \\ &= \frac{2+18}{1+36} + i\frac{-12+3}{1+36} \\ &= \frac{20}{37} - i\frac{9}{37} \end{aligned}$$