Some additional practice (copy these into your notes but **do not submit anything**):

1. Given $z = 3 - 2i$ and $w = 4 + 5i$, compute:

   (a) $z + w$ (b) $3z - 2\overline{w}$ (c) z^2 (d) zw (e) $\dfrac{\overline{z}}{w}$

2. Compute the following powers of i:

   (a) i^3 (b) i^4 (c) i^6 (d) i^{-5} (e) i^{1410}

3. Convert from polar to rectangular form:

   (a) $z = 3e^{i(\pi/6)}$ (b) $z = 2e^{i(17\pi/4)}$ (c) $z = 5e^{i(-19\pi/6)}$ (d) $z = 1410e^{i(1410\pi)}$

1. Solve the following equations for z:

   (a) $\dfrac{3z}{5 - 2z} = 1 + 3i$

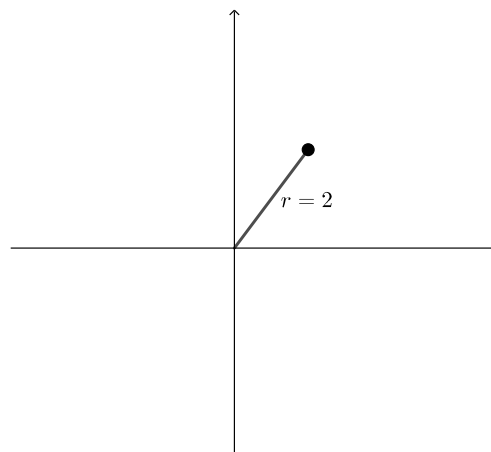   (b) $3z + (2 - 4i)\bar{z} = 4 + 5i$

2. A complex number z is plotted on the right. On the same set of coordinate axes, also plot:

   (a) $2z$

   (b) $\bar{z}$

   (c) z^2

   (d) $\dfrac{1}{z}$

   Your plots do not have to be perfectly accurate and you do not have to explain your choices here, but you should be sure that you could explain them if asked to do so.

3. Convert $z = 1 - \sqrt{3}i$ to polar form, and compute the powers z^7 and z^{-3}.