1
$$A = 3 + i$$

$$B=2i$$

$$C=-3-4i$$

$$D=2-2i$$

$$E=-3$$

$$F=-1-i$$

2
$$A=3-4i$$

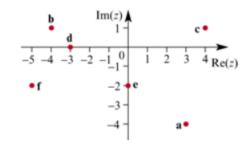
$$B=-4+i$$

$$C=4+i$$

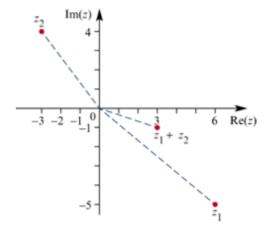
$$D=-3$$

$$E=-2i$$

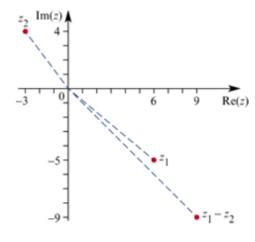
$$F=-5-2i$$



3 a
$$z_1+z_2=(6-5i)+(-3+4i) \ =3-i$$



$$egin{aligned} \mathsf{b} & z_1 - z_2 = (6 - 5i) - (-3 + 4i) \ &= 9 - 9i \end{aligned}$$



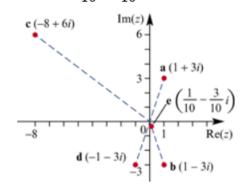
- 4 a A: z = 1 + 3i
 - $\mathbf{b} \quad B:\overline{z}=1-3i$

c
$$C: z^2 = 1 + 6i + 9i^2$$

= $-8 + 6i$

$$\begin{array}{ll} \mathbf{d} & D: -z = -(1+3i) \\ & = -1-3i \end{array}$$

$$\begin{array}{ll} \mathbf{e} & E: \frac{1}{z} = \frac{1}{1+3i} \\ & = \frac{1}{1+3i} \times \frac{1-3i}{1-3i} \\ & = \frac{1-3i}{1+9i^2} \\ & = \frac{1}{10} - \frac{3}{10}i \end{array}$$



5 a
$$A: z = 2 - 5i$$

$$\begin{array}{ll} \mathbf{b} & B: zi = i(2-5i) \\ & = 2i - 5i^2 \\ & = 5 + 2i \end{array}$$

c
$$C: zi^2 = -z = -2 + 5i$$

$$\begin{array}{ll} \mathsf{d} & D: zi^3 = -iz \\ & = -i(2-5i) \\ & = -5-2i \end{array}$$

e
$$E: zi^4 = z = 2 - 5i$$

