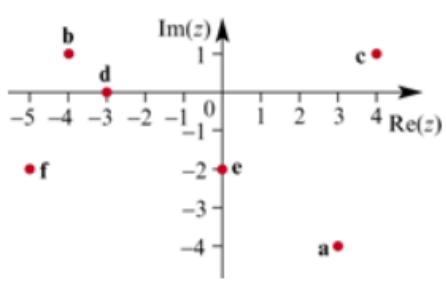
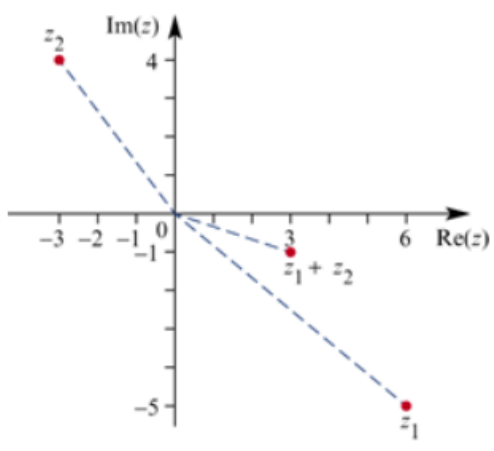


- 1  $A = 3 + i$   
 $B = 2i$   
 $C = -3 - 4i$   
 $D = 2 - 2i$   
 $E = -3$   
 $F = -1 - i$

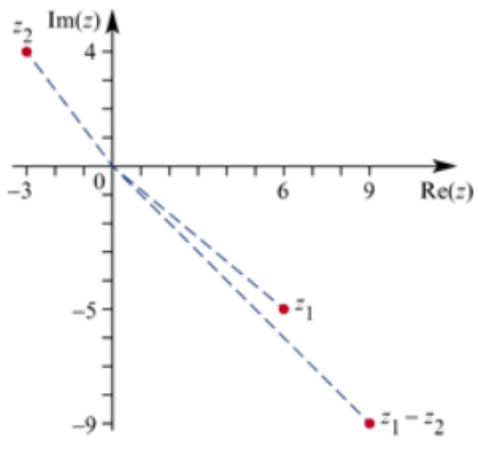
- 2  $A = 3 - 4i$   
 $B = -4 + i$   
 $C = 4 + i$   
 $D = -3$   
 $E = -2i$   
 $F = -5 - 2i$



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



- b  $z_1 - z_2 = (6 - 5i) - (-3 + 4i)$   
 $= 9 - 9i$

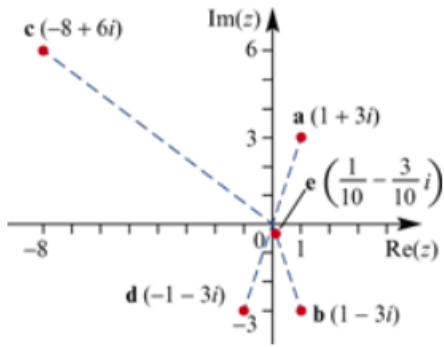


- 4 a  $A : z = 1 + 3i$   
 b  $B : \bar{z} = 1 - 3i$

c  $C : z^2 = 1 + 6i + 9i^2$   
 $= -8 + 6i$

d  $D : -z = -(1 + 3i)$   
 $= -1 - 3i$

e  $E : \frac{1}{z} = \frac{1}{1 + 3i}$   
 $= \frac{1}{1 + 3i} \times \frac{1 - 3i}{1 - 3i}$   
 $= \frac{1 - 3i}{1 + 9i^2}$   
 $= \frac{1}{10} - \frac{3}{10}i$



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

b  $B : zi = i(2 - 5i)$   
 $= 2i - 5i^2$   
 $= 5 + 2i$

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

d  $D : zi^3 = -iz$   
 $= -i(2 - 5i)$   
 $= -5 - 2i$

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

