

Q3) a)

$$(i) \left(\frac{1+i}{1-i} \right)^3$$

$$= \frac{(1+i)^2}{(1-i)(1+i)}$$

$$= \frac{1^2 + i^2 + 2(i)i}{1^2 - i^2}$$

$$i^2 = -1$$

$$Z = \frac{1-1+2i}{1+1}$$

$$Z = \frac{2i}{2}$$

$$Z = i$$

a + ib form: a = 0 and b = 1