

Least positive argument of the 4th root of the complex number  $2 - i\sqrt{12}$  is

A.  $\pi/6$

B.  $5\pi/12$

C.  $7\pi/12$

D.  $11\pi/12$

Correct Answer - B

$$(b) z^4 = 2(1 - \sqrt{3}i) = 4 \left( \frac{1}{2} - \frac{\sqrt{3}}{2}i \right)$$

$$= 4 \left[ \cos \left( -\frac{\pi}{3} \right) + i \sin \left( -\frac{\pi}{3} \right) \right]$$

$$z = \sqrt{2} \left[ \cos \left( \frac{2m\pi - (\pi/3)}{4} \right) + i \sin \left( \frac{2m\pi - (\pi/3)}{4} \right) \right]$$

$$\text{For } m = 1, z = \sqrt{2} \left[ \cos \left( \frac{5\pi}{12} \right) + i \sin \left( \frac{5\pi}{12} \right) \right]$$