Therefore, the number of people who speak only English and not Hindi is 25, and the total number of people who speak English is 50.

2. **Simplify** $z = \frac{(cos\,\theta + isin\theta)^5}{(cos\,\theta - isin\theta)^4}$ **into** $x + iy$ **form and find its modulus and the amplitude.**

Rewriting the denominator using the conjugate property:

(cos θ - i sin θ) = (cos θ + i sin θ)^*

Using the De Moivre's theorem, we can simplify the numerator and denominator:

(cos θ + i sin θ)^5 = cos(5θ) + i sin(5θ)

Now using the formula,

(cos θ + i sin θ)^* = cos(-θ) + i sin(-θ) = cos θ - i sin θ

Substituting these simplified expressions back into the original equation:

z = (cos(5θ) + i sin(5θ)) / (cos θ - i sin θ)

Rationalising the denominator we get,

z = [(cos(5θ) + i sin(5θ)) * (cos θ + i sin θ)] / [(cos θ - i sin θ) * (cos θ + i sin θ)]

Expanding the numerator and denominator:

z = [cos(5θ)cosθ + i sin(5θ)cosθ + i cos(5θ)sinθ - sin(5θ)sinθ] / [cos^2(θ) + sin^2(θ)]

Simplifying:

z = [(cos(5θ)cosθ - sin(5θ)sinθ) + i (sin(5θ)cosθ + cos(5θ)sinθ)] / 1

Using the trigonometric identities:

z = [cos(6θ) + i sin(6θ)] / 1

Therefore, z simplifies to:

z = cos(6θ) + i sin(6θ)