

NATIONAL UNIVERSITY OF SINGAPORE
Department of Electrical Engineering

EE2029 Introduction to Electrical Energy Systems
(Tutorial: Transformers)

- Find the turns ratio of a single-phase transformer that transforms the primary voltage 12,740 V of a power line to the secondary voltage 240 V supplied to a house.

(Answer: 53)

- The output stage of an audio system has an output resistance of 2 k Ω . An output transformer provides resistance matching with a 6 Ω speaker. If this transformer has 400 primary turns, how many secondary turns does it have?

(Answer: 22 turns)

- Find i_1 , i_2 and i_3 for the circuit shown in Fig. 1. The transformers are ideal.

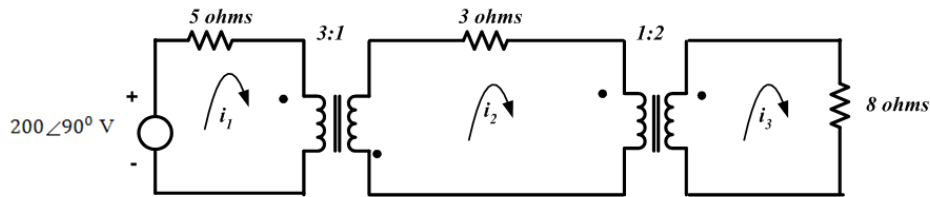


Fig. 1

(Answer: $4 \angle 90^\circ$ A, $12 \angle 270^\circ$ A, $6 \angle 270^\circ$ A)

- A 33 kVA, 960/120 V, single phase transformer was tested and the following test data were obtained. Draw the simplified equivalent circuit of this transformer.

	Voltage (V)	Current (A)	Power (W)
Short-circuit test	63	Rated Current	300
Open-circuit test	Rated Voltage	6	320