Transformers

You are going to do some research (internet/textbook) to find out how transformers work and why they are used in electrical power distribution.

1) Find out about the anatomy of a transformer. Cut and paste/draw a labelled diagram.

2) Answer the following key questions
   Why is the core made of 'soft iron'?
   Why is the core laminated?
   Why are the wires insulated?

3) The transformer doesn't work with direct current (d.c.). Explain why an alternating current is needed.
4) Unmix the following sentences, so they are in the correct order.

• This produces an changing magnetic field in the soft iron core
• An alternating voltage is applied across the primary coil.
• A changing magnetic field in the soft iron core induces an alternating voltage across the secondary coil.
• The alternating voltage causes an alternating current to flow in the primary coil.
• An alternating voltage across the secondary coil causes an alternating current to flow.

5) Step-up and step-down transformers are used in electrical power distribution networks. What do these types of transformers do?
6) Why is it better to transfer electrical power at high voltage?
7) Why is high voltage not used in homes?