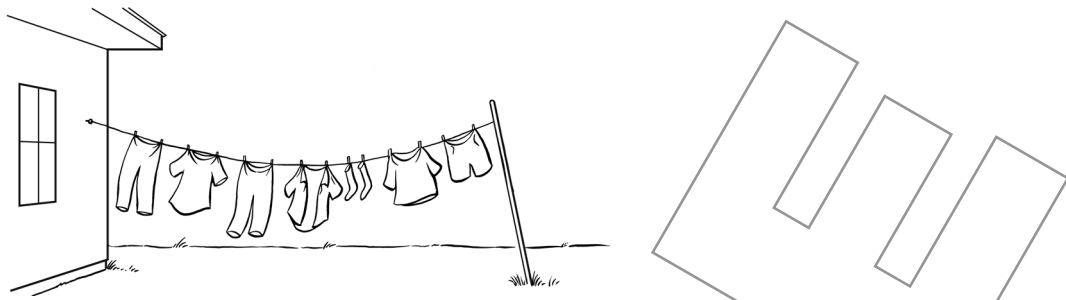
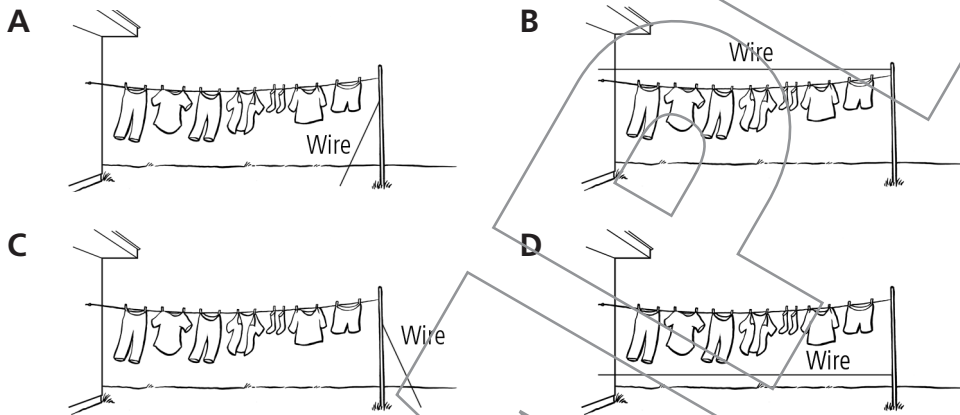


Use the picture below to answer question 39.



- 39** A backyard clothesline is too heavy and is causing the pole to tip over. Which of the following shows how a metal wire can exert a force on the pole to help it stay upright?

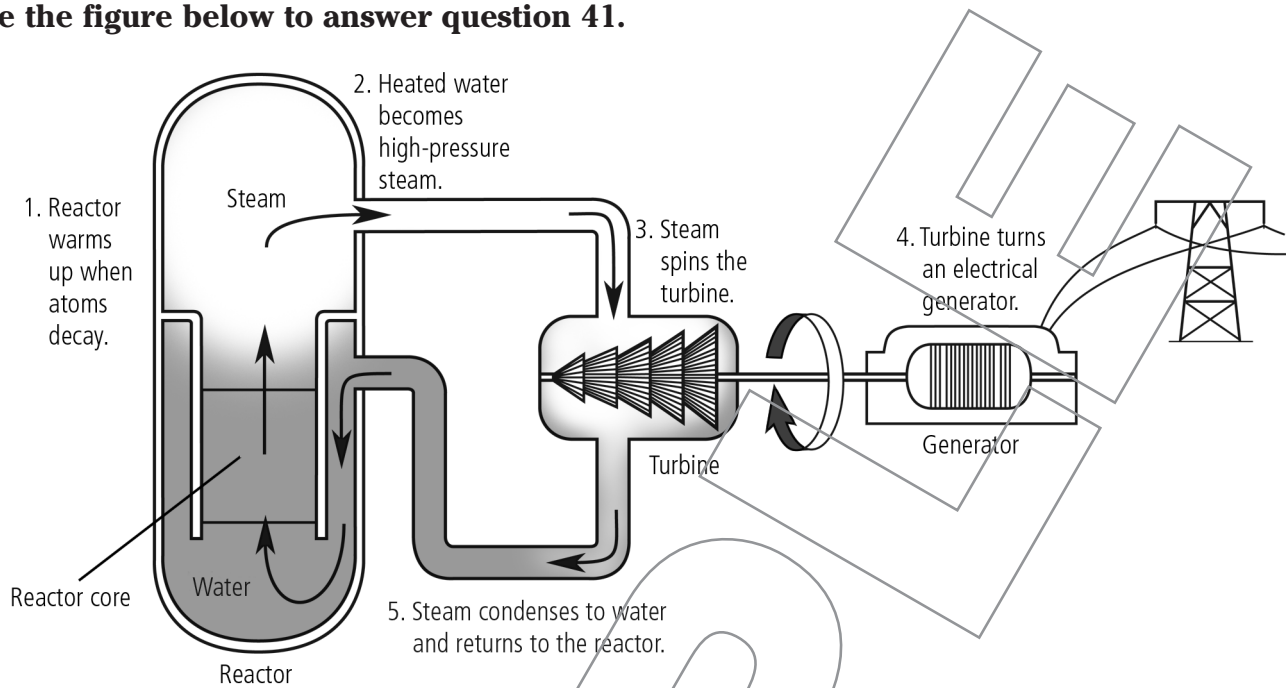


- 40** The calcium level in a stream is measured to be 200 parts per million. Which of the following numbers represents 200 parts per million?

- A 200,000,000
- B 1,000,200
- C 0.2000000
- D 0.000200

This is a short open-ended (SOE) question. It is worth two points.

Use the figure below to answer question 41.



- 41** A nuclear power plant uses many parts such as a reactor, a steam-driven turbine, and a generator to produce electricity. In the reactor, atoms decay and give off heat. Water in the reactor turns into high-pressure steam. The steam pressure spins a turbine, which in turn spins an electrical generator. After passing through the turbine, the steam cools, becoming water again. The water returns to the reactor.

Part A: How is the energy of a nuclear reaction used to produce electricity?
Describe the transformation of energy that occurs at each step in the process.

Part B: Electricity from the power plant is transmitted to many homes. Describe some of the energy transformations that occur when this electricity is used to power a home stereo or CD player.

