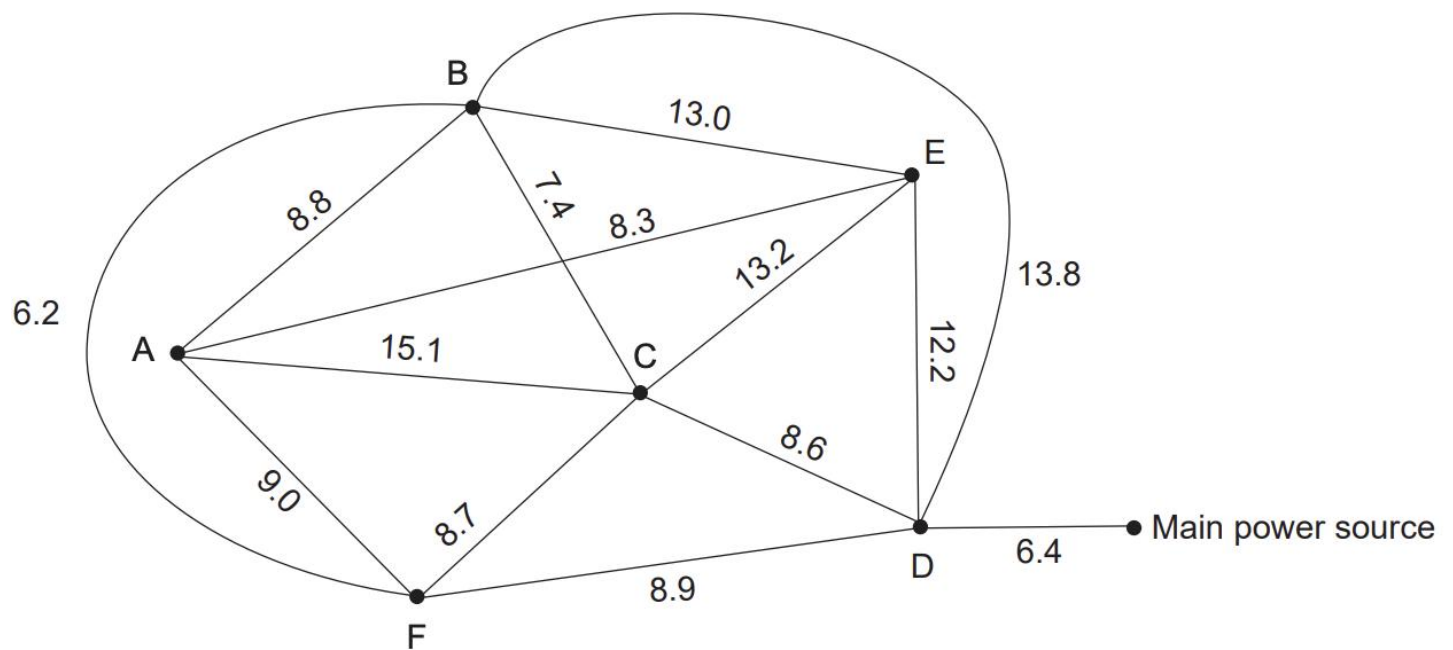


Question 14

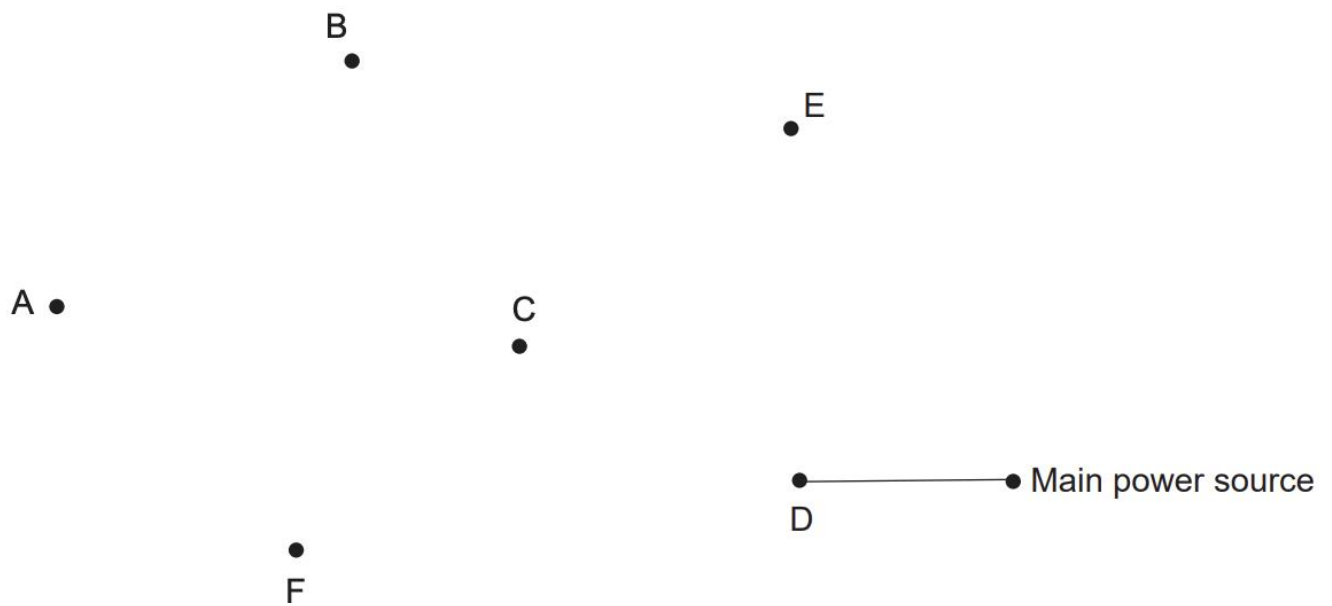
(9 marks)

Electric wiring is being installed to six powered sites (A–F) at a new caravan park from the main power source. The distance, in metres, between each site is shown below.



(a) Complete the minimum spanning tree below.

(3 marks)



- (b) The cost of installing the electric wiring is \$14.20 per metre. If the wiring must include the connection between D and the main power source
- (i) calculate the minimum length of wiring required. (2 marks)
- (ii) calculate the total cost of installing the wiring. (1 mark)

It is discovered that between Sites B and F there is a large section of rock. The owner can still install the wiring directly between these two sites but the cost for that section will double in price.

- (c) What effect, if any, will this have on the minimum spanning tree and total cost of the installation? A copy of the **original** graph has been provided below. (3 marks)

