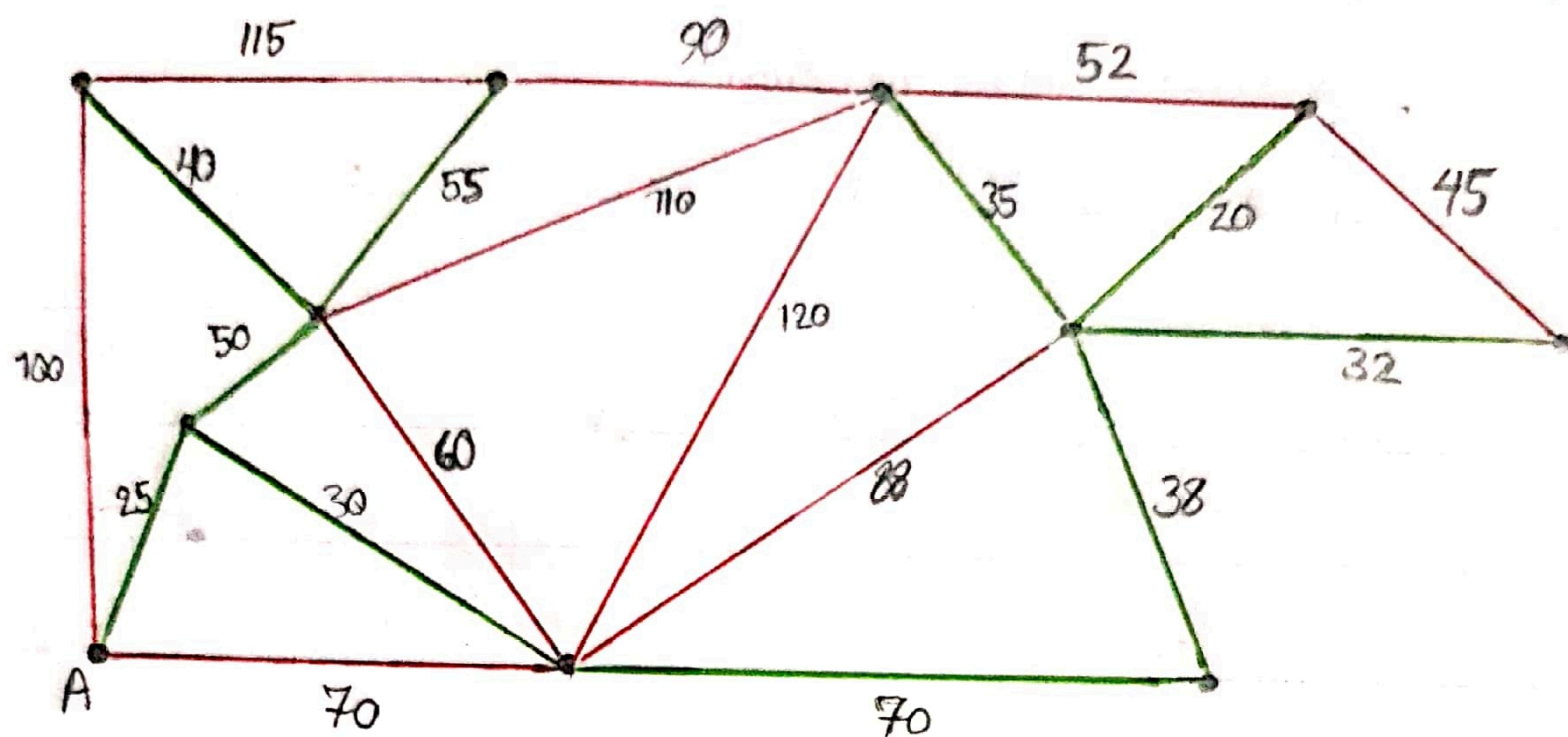


Quiz 26

98412004 و 98411387

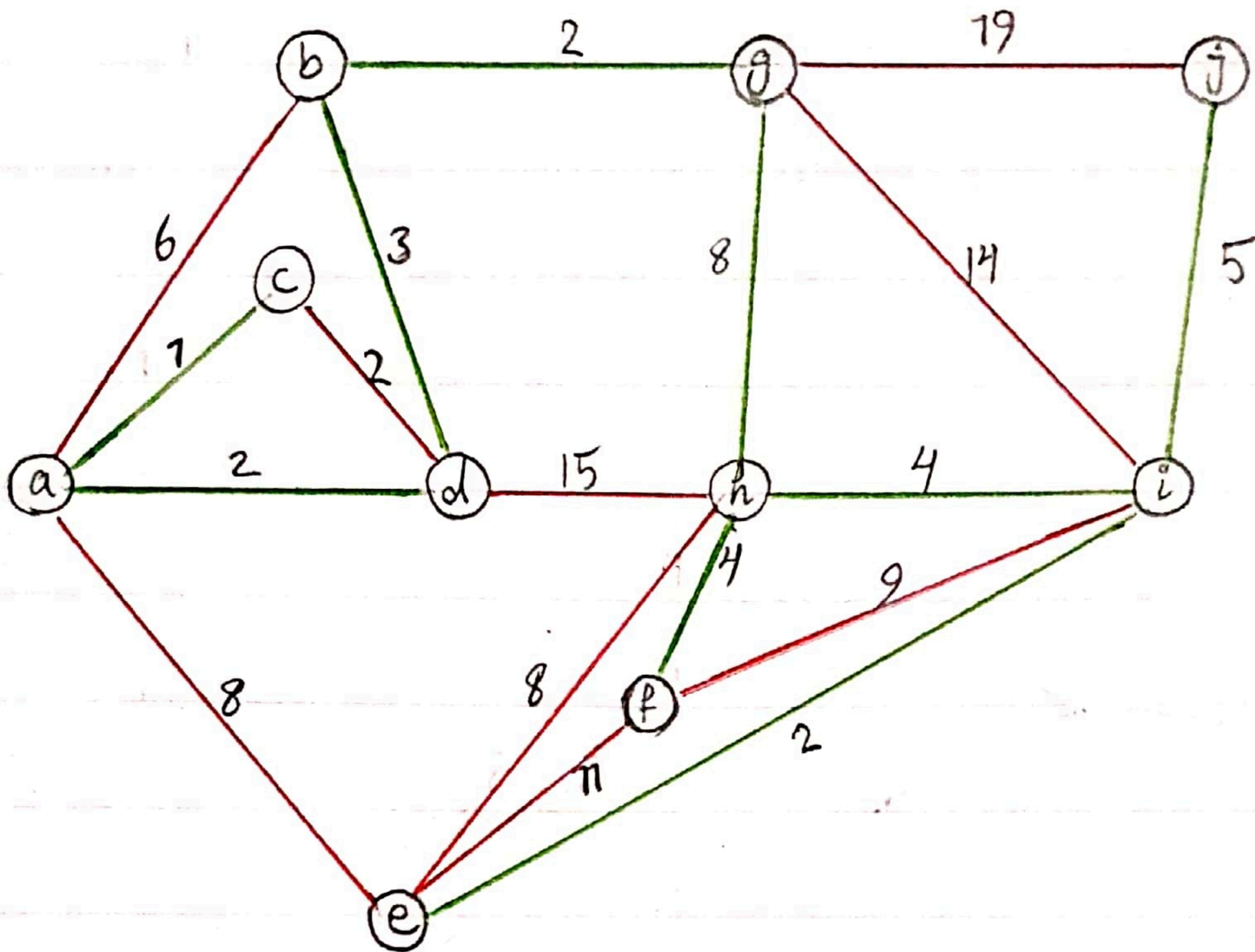
①



②

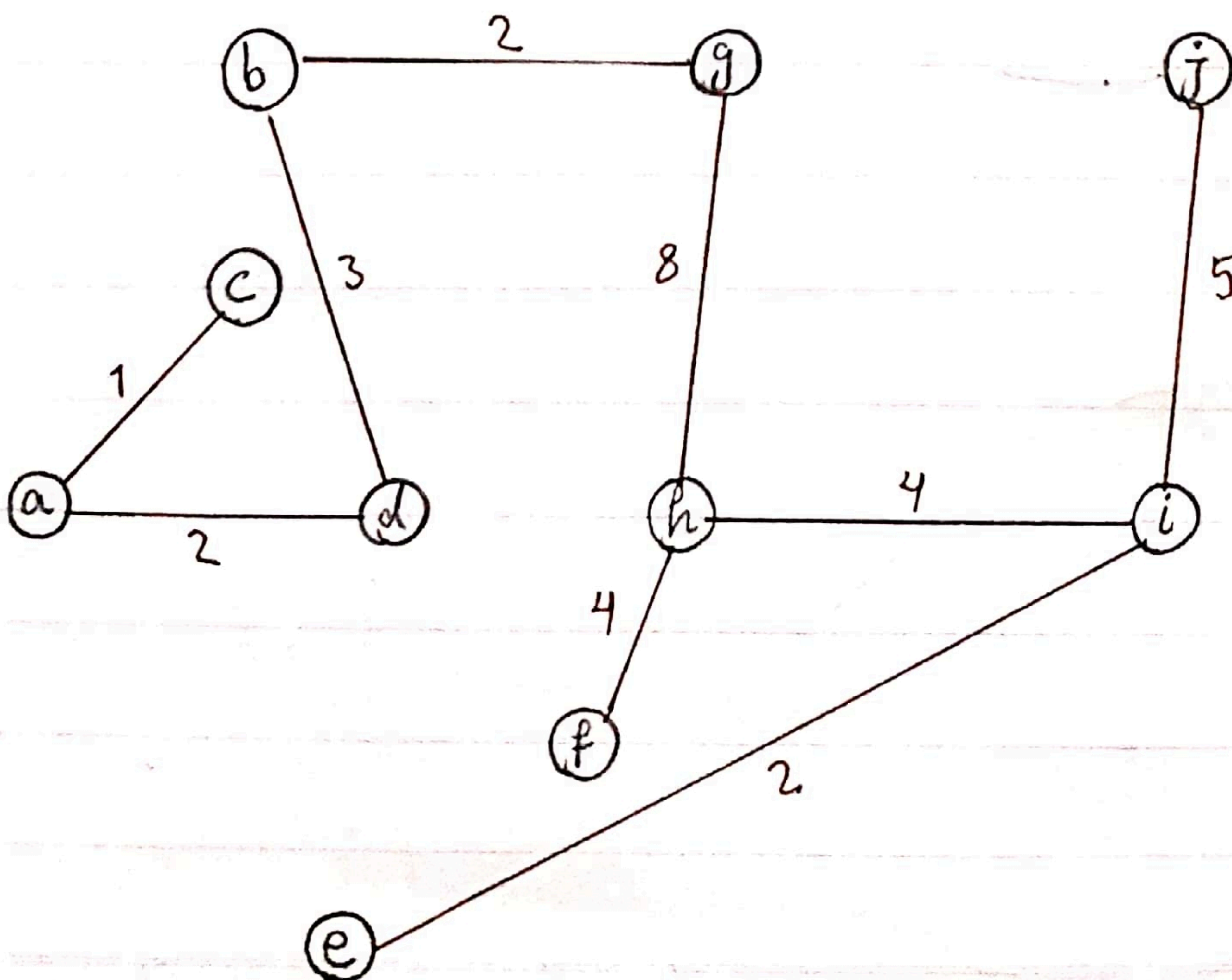
The solution is similar to previous question:

$$n-1 = 10-1 = \boxed{9} \rightarrow \text{number of edges}$$



The final minimum spanning tree:

$$\text{Total: } 1 + 2 + 3 + 2 + 8 + 4 + 4 + 5 + 2 = \boxed{31}$$



$a \rightarrow c$

$a \rightarrow d$

$b \rightarrow g$

$e \rightarrow i$

$d \rightarrow b$

$h \rightarrow f$

$h \rightarrow i$

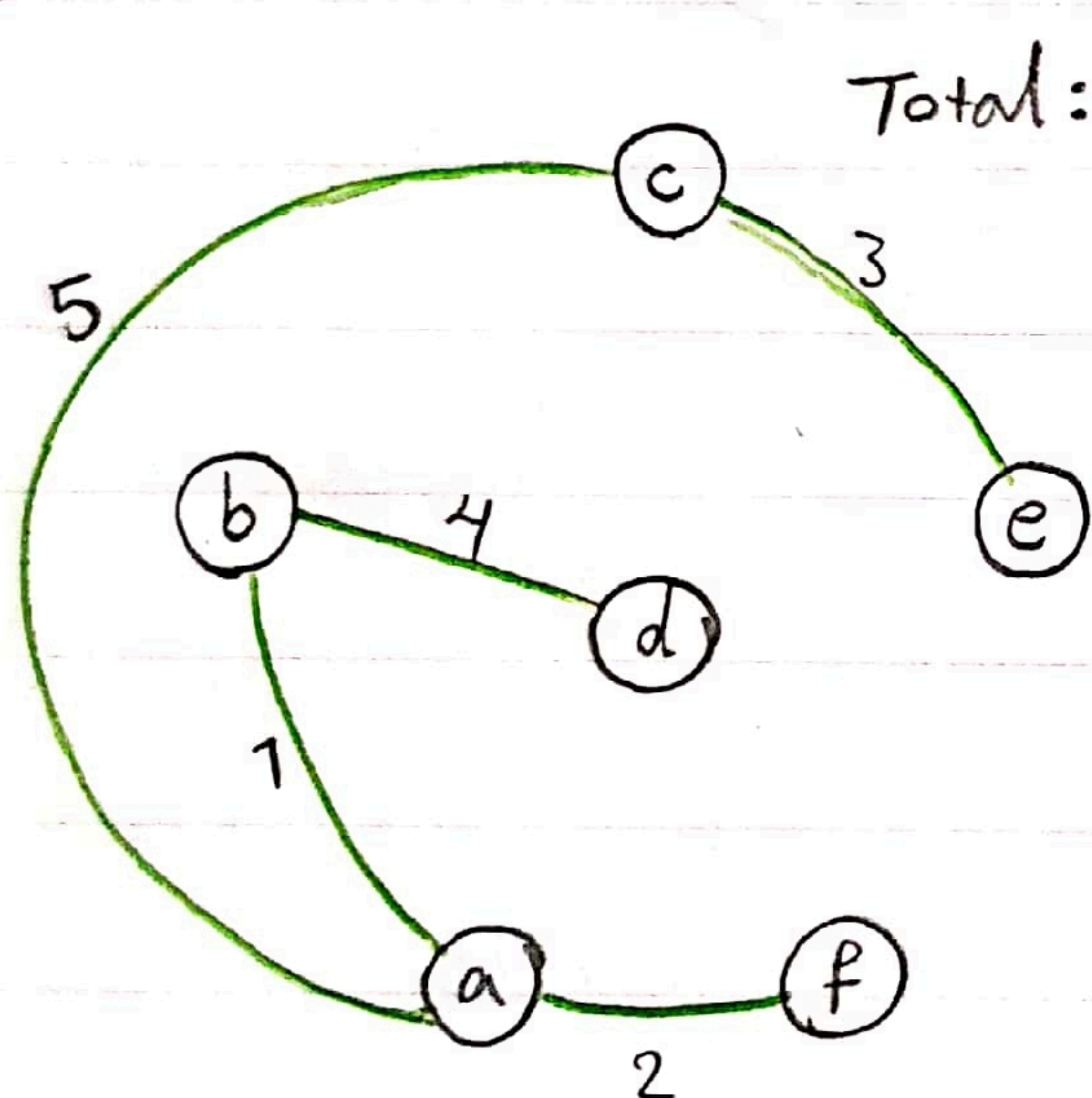
$i \rightarrow j$

$g \rightarrow h$

③

Prim's algorithm: we start with a desired vertex and in each step, we should choose an edge between edges which are connected to the vertex that we have chosen. Well, because it is MST, we should choose the edge which has less weight. Consider that, like Kruskal's algorithm, we can't have cycles. OK, in this case we'll start with "a".

$$n-1 = 6-1 = \boxed{5} : \text{number of edges}$$



$$\text{Total: } 1 + 2 + 4 + 5 + 3 = \boxed{15}$$

$$a \rightarrow b$$

$$a \rightarrow f$$

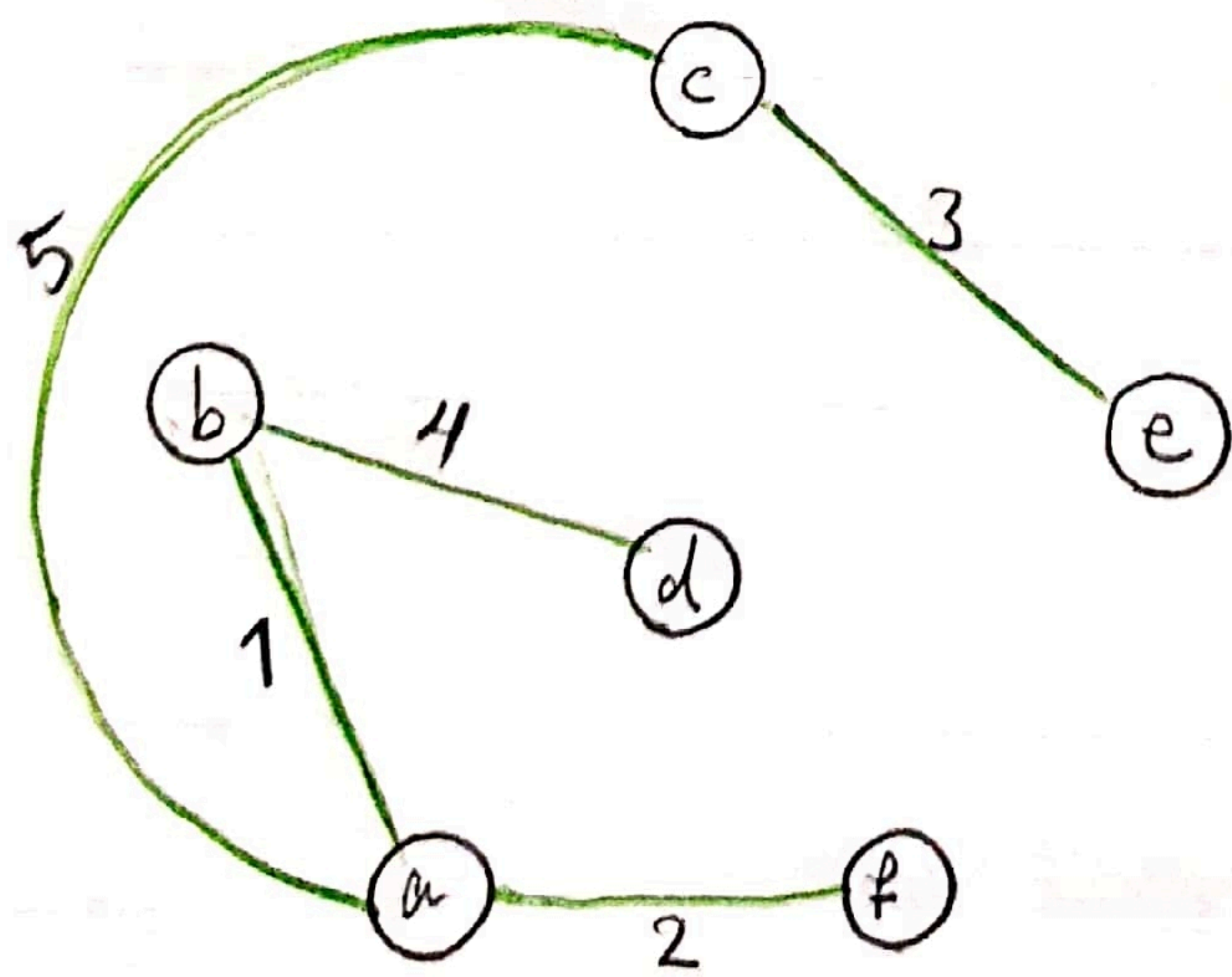
$$b \rightarrow d$$

$$a \rightarrow c$$

$$c \rightarrow e$$

Kruskal's algorithm:

$$\text{Total: } 1 + 2 + 3 + 4 + 5 = \boxed{15}$$



$$a \rightarrow b$$

$$a \rightarrow f$$

$$c \rightarrow e$$

$$b \rightarrow d$$

$$a \rightarrow c$$