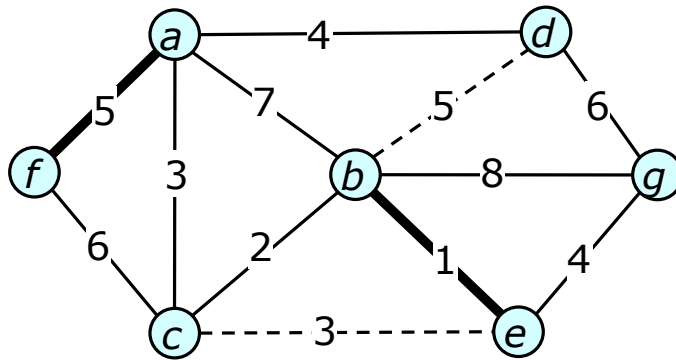


Quiz 1

- (5 points) The diagram below shows an intermediate state in the execution of the general greedy method for minimum spanning tree. Blue edges are shown as heavy-weight, red edges are shown dashed.



Suppose that the blue rule is applied in the next step. List two edges that could be selected by the blue rule, and for each, identify the associated cut.

Suppose that instead, the red rule is applied next. Identify an edge that could be selected by the red rule, and the associated cycle.

2. (5 points) The diagram below shows the h and key arrays used to implement a d -heap with $d=2$.

	1	2	3	4	5	6	7	8	9	10
h	e	i	c	b	a	f	d	g	j	h

	a	b	c	d	e	f	g	h	i	j
key	8	13	11	17	3	14	15	16	7	19

In the diagram below, show how the h array changes following a *deletemin* operation.

	1	2	3	4	5	6	7	8	9	10
h										