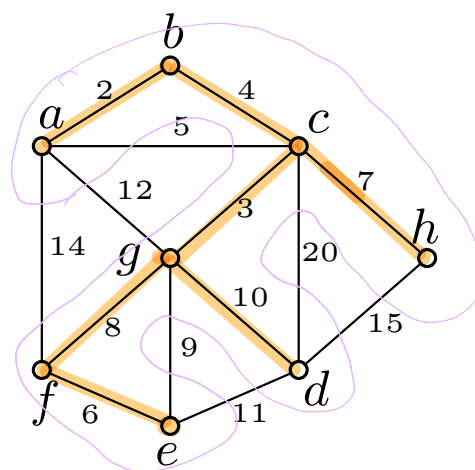# Practice Problems - Prim's Algorithm

Prim's Algorithm 1

Run Prim's algorithm on the graph with start vertex a. Assume that vertices are ordered alphabetically.

For each step of the algorithm specify the current vertex weights (you can use a table to represent this data).

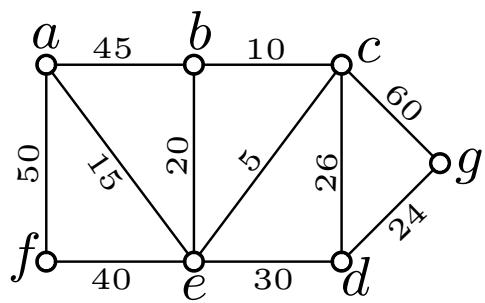| RM	a	b	c	d	e	f	g	h
$-$	0	∞	∞	∞	∞	∞	∞	∞
a	$-$	2	5	∞	∞	14	12	∞
b	$-$	$-$	4	∞	∞	14	12	∞
c	$-$	$-$	$-$	20	∞	14	3	7
g	$-$	$-$	$-$	10	9	8	$\frown$	7
h	$-$	$-$	$-$	10	9	8	$-$	$-$
f	$-$	$-$	$-$	10	6	$-$	$-$	$-$
e	$-$	$-$	$-$	10	$-$	$-$	$-$	$-$
d	$-$	$-$	$-$	$-$	$-$	$-$	$-$	$-$

Draw the minimum spanning tree the algorithm finds:

Prim's Algorithm 2

Run Prim's algorithm on the graph with start vertex a. Assume that vertices are ordered alphabetically.

For each step of the algorithm specify the current vertex weights (you can use a table to represent this data).

Removed	a	b	c	d	e	f	g
−	0	∞	∞	∞	∞	∞	∞
a	−	45	∞	∞	15	50	∞
e	−				−		
	−				−		
	−				−		
	−				−		
	−				−		
	−				−		

Draw the minimum spanning tree the algorithm finds: