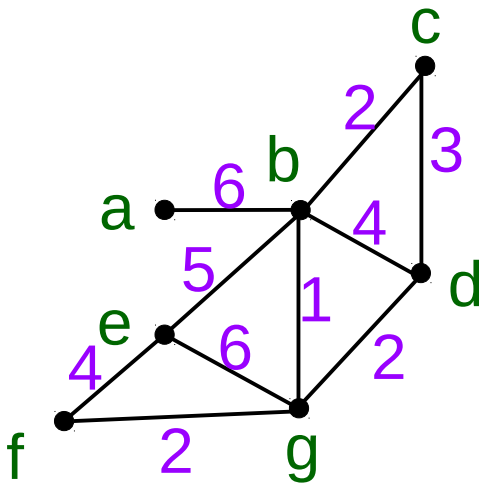


Practice

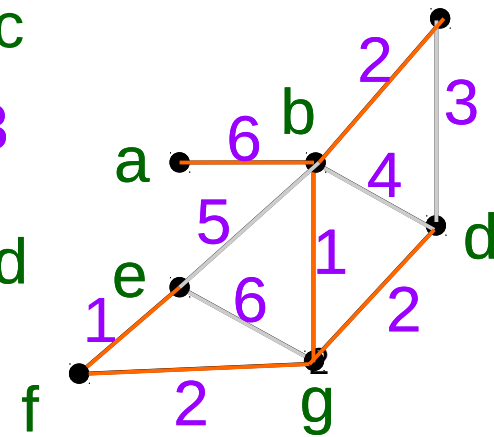
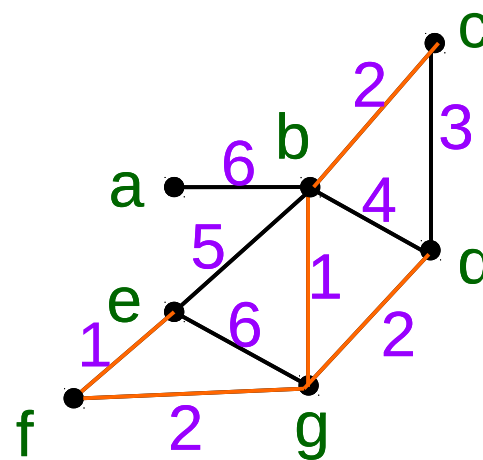
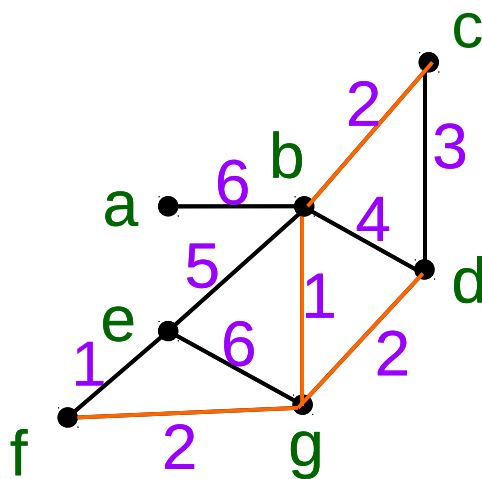
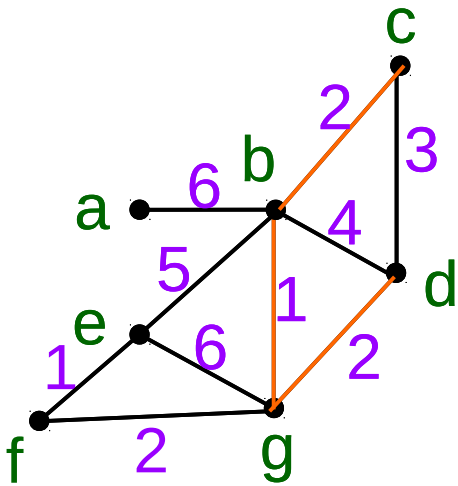
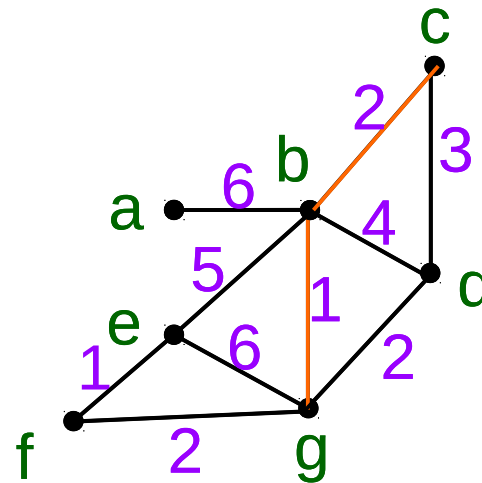
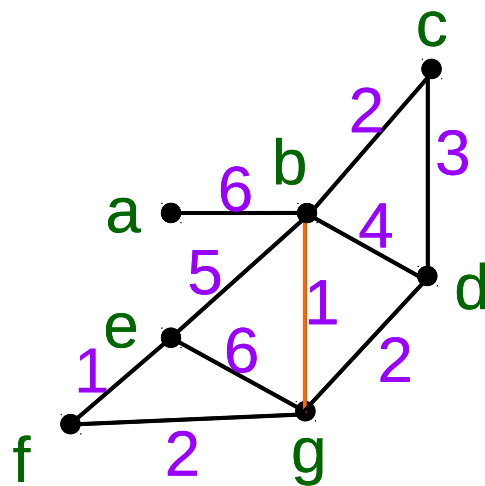
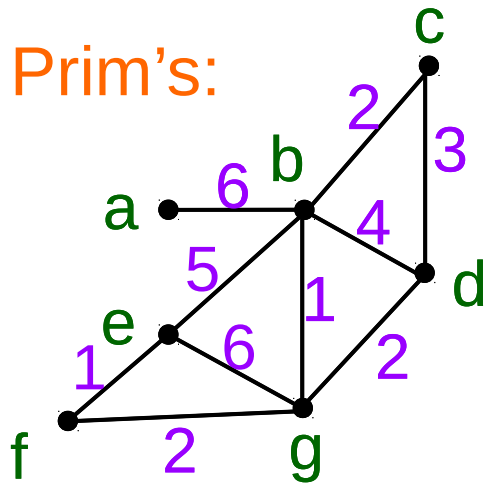
Exercise 1: Use Kruskal's and Prim's algorithms to find minimum spanning trees for the graph G .



Practice

Exercise 1: Use Kruskal's and Prim's algorithms to find minimum spanning trees for the graph G .

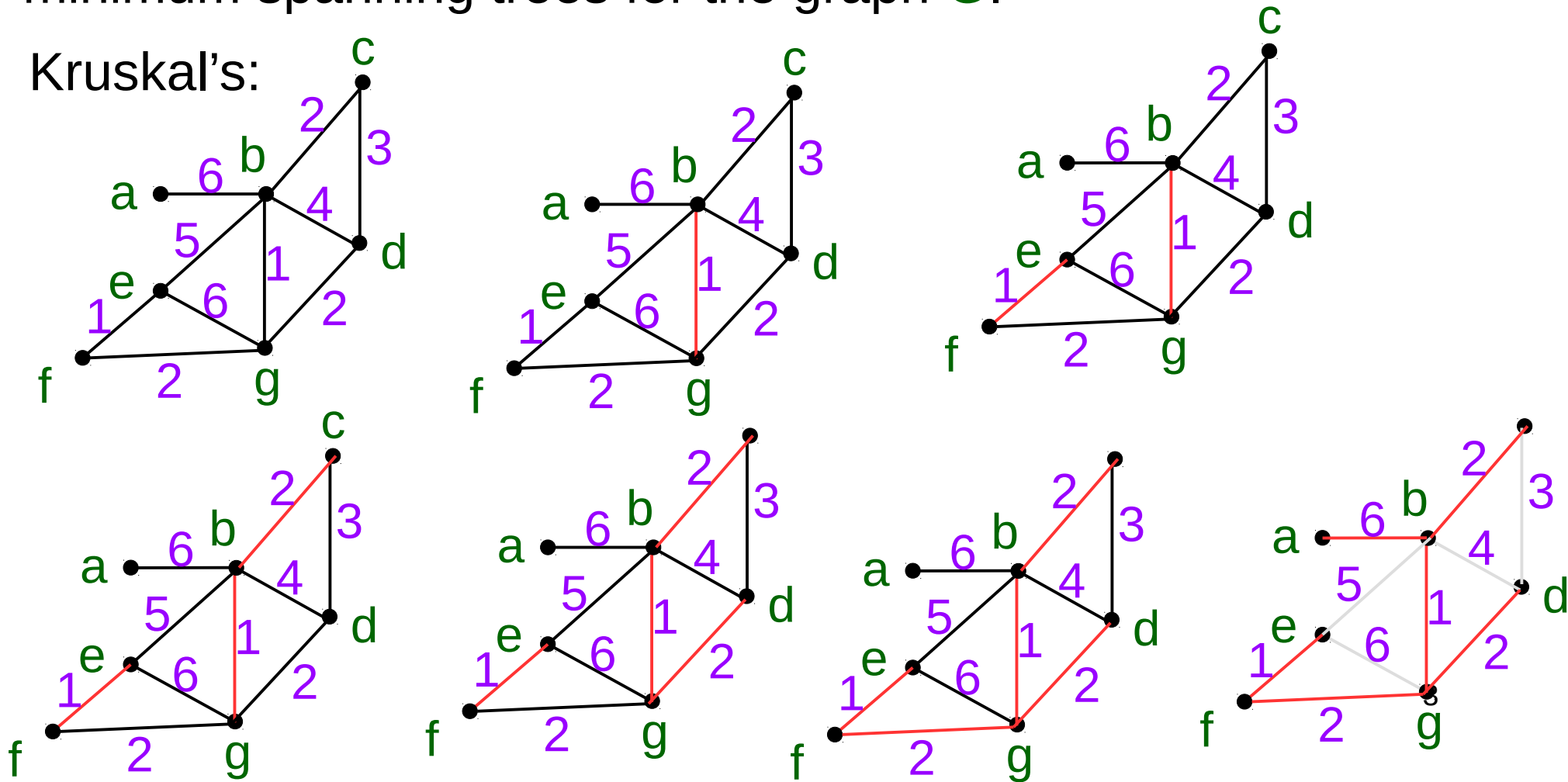
Prim's:



Practice

Exercise 1: Use Kruskal's and Prim's algorithms to find minimum spanning trees for the graph G .

Kruskal's:



Practice

Exercise 2: Three men, traveling with their wives, came to a river which they wanted to cross. The one available boat would accommodate only two people.

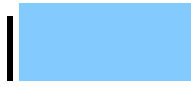
Since the husbands were very jealous, no woman could be with a man unless her own husband was present.

Under these severe handicaps, how can they get across the river using the one boat?

Here is an allowed situation:

$H_1 W_1 H_2$ |  | W_2

And here is a prohibited situation:

$H_1 W_1 W_2$ |  | H_2

Exercise 2: a possible solution

$H_1 W_1 H_2 W_2 H_3 W_3$		
$H_2 W_2 H_3 W_3$	$H_1 W_1 \rightarrow$	
$H_2 W_2 H_3 W_3$	$\leftarrow H_1$	W_1
$H_1 H_3 W_3$	$H_2 W_2 \rightarrow$	W_1
$H_1 H_3 W_3$	$\leftarrow H_2$	$W_1 W_2$
$H_1 H_2$	$H_3 W_3 \rightarrow$	$W_1 W_2$
$H_1 H_2$	$\leftarrow W_1 W_2$	$H_3 W_3$
$H_1 W_1$	$H_2 W_2 \rightarrow$	$H_3 W_3$
$H_1 W_1$	$\leftarrow W_2$	$H_2 H_3 W_3$
H_1	$W_1 W_2 \rightarrow$	$H_2 H_3 W_3$
H_1	$\leftarrow W_1 \rightarrow$	$H_2 W_2 H_3 W_3$
	$H_1 W_1 \rightarrow$	$H_2 W_2 H_3 W_3$
		$H_1 W_1 H_2 W_2 H_3 W_3$

Practice

Exercise 2: Three men, traveling with their wives, came to a river which they wanted to cross. The one available boat would accommodate only two people.

Since the husbands were very jealous, no woman could be with a man unless her own husband was present.

Under these severe handicaps, how can they get across the river using the one boat?

We can build a graph model to solve this puzzle, but this employs “*converting one problem to another*”.

Visit this page if you are curious:

<https://www.cs.uni.edu/~wallingf/teaching/cs3530/sessions/session23.html>