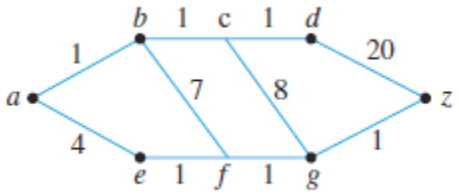
Assignment 10: 14, 15

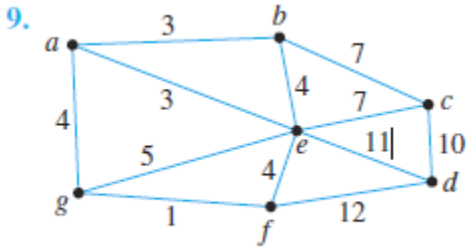
Use Dijkstra's algorithm to find the shortest path from *a* to *z* for each of the graphs in 13–16. In each case make tables similar to Table 10.7.1 to show the action of the algorithm.

14.



Step	V(T)	E(T)	F	L(a)	L(b)	L(c)	L(d)	L(e)	L(f)	L(g)	L(z)
0	{a}	Ø	{a}	**0**	∞	∞	∞	∞	∞	∞	∞
1	{a}	Ø	{b,e}	0	**1**	∞	∞	4	∞	∞	∞
2	{a,b}	{{a,b}}	{c,f,e}	0	1	2	∞	4	8	∞	∞
3	{a,b,c}	{{a,b},{b,c}}	{e,d,g}	0	1	2	3	4	8	10	∞
4	{a,b,c,d}	{{a,b},{b,c},{c,d}}	{e,z}	0	1	2	3	**4**	8	10	23
5	{a,e}	{{a,b},{b,c},{c,d},{a,e}}	{f}	0	1	2	3	4	**5**	∞	∞
6	{a,e,f}	{{a,b},{b,c},{c,d},{a,e},{e,f}}	{g}	0	1	2	3	4	5	**6**	∞
7	{a,e,f,g}	{{a,b},{b,c},{c,d},{a,e},{e,f},{f,g}}	{z}	0	1	2	3	4	5	6	**7**
8	{a,e,f,g,z}	{{a,b},{b,c},{c,d},{a,e},{e,f},{f,g},{g,z}}									

9.



15. The graph of exercise 9 with *a* = *a* and *z* = *f*

Step	V(T)	E(T)	F	L(a)	L(b)	L(c)	L(d)	L(e)	L(g)	L(z)
0	{a}	Ø	{a}	**0**	∞	∞	∞	∞	∞	∞
1	{a}	Ø	{b,e,g}	0	**3**	∞	∞	3	4	∞
2	{a,b,e}	{{a,b},{a,e}}	{g,c,f}	0	3	10	∞	3	4	7
3	{a,g}	{{a,b},{a,e},{a,g}}	{f}	0	3	10	∞	3	4	**5**
4	{a,g,f}	{{a,b},{a,e},{a,g},{g,f}}								