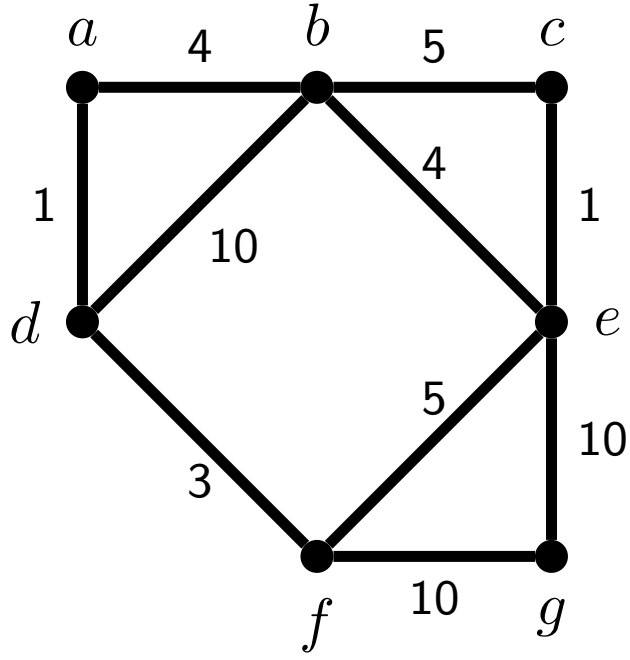
Kruskal's algorithm (for minimal trees)

Iteratively add smallest edge possible.
(Ties broken arbitrarily)



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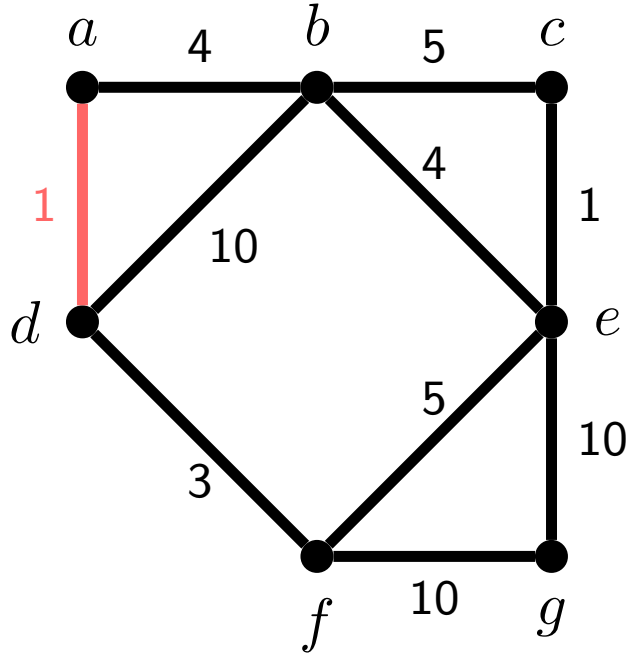

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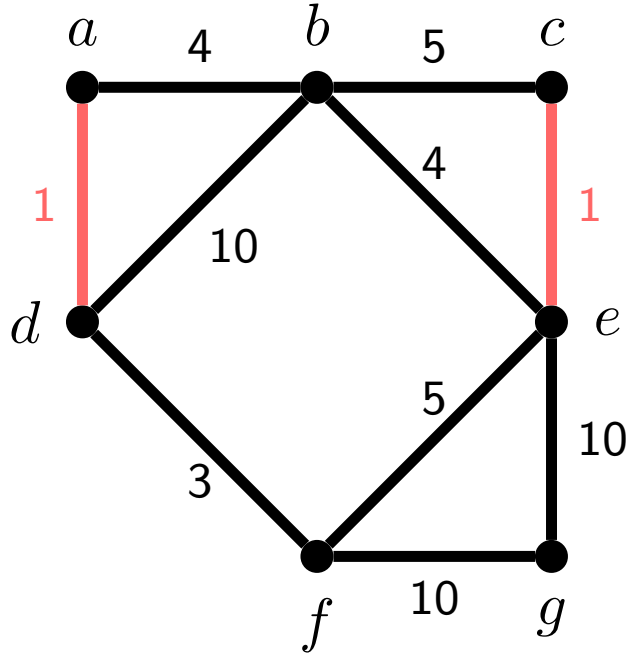

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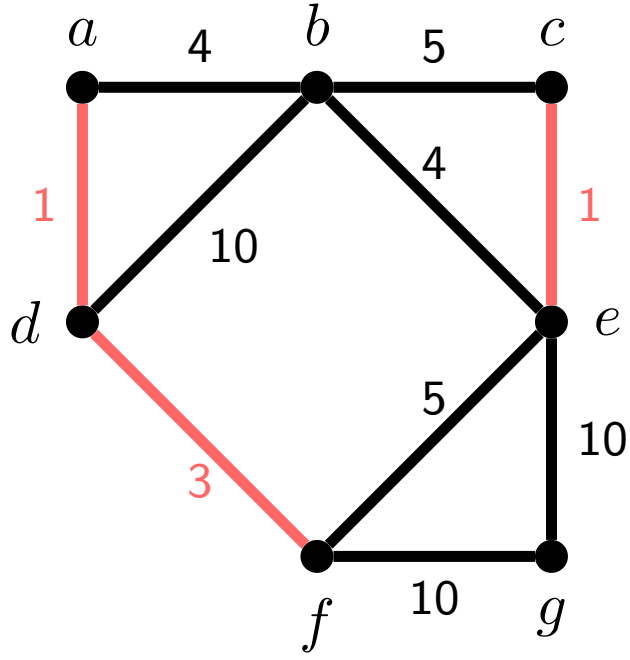

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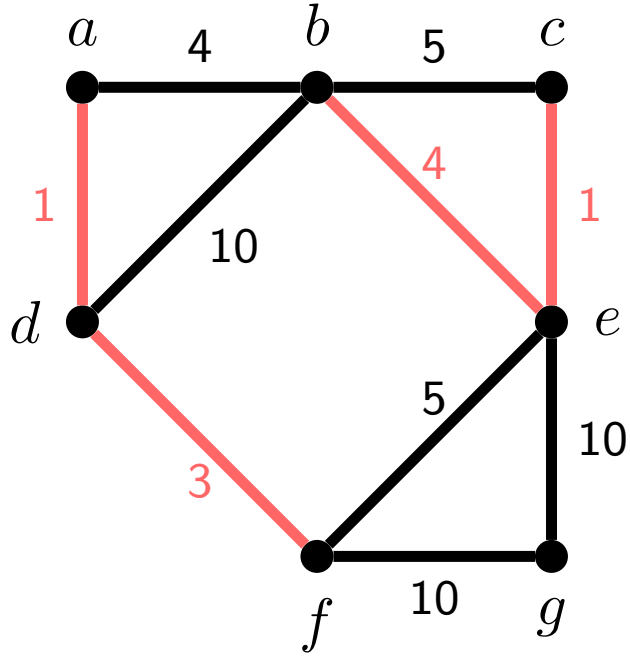

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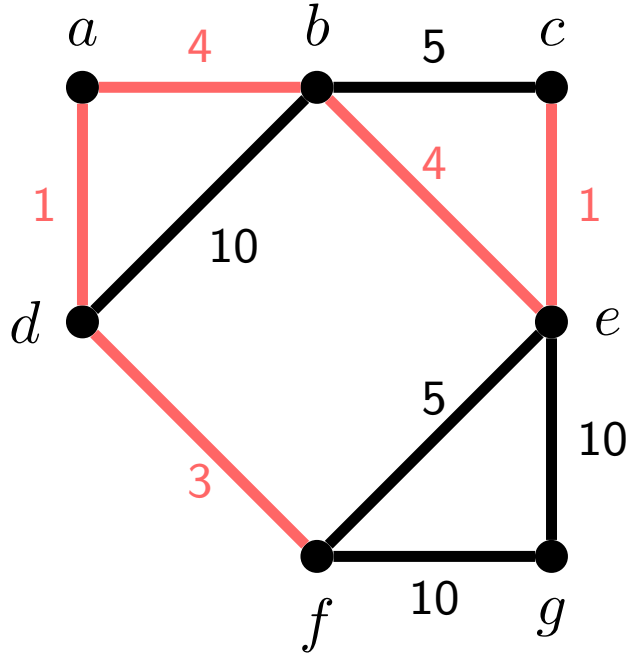

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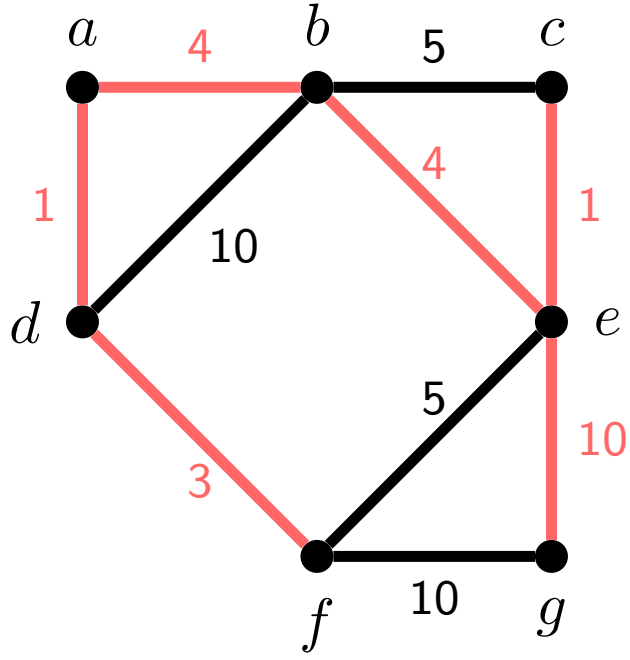

Prim's algorithm (for minimal trees)

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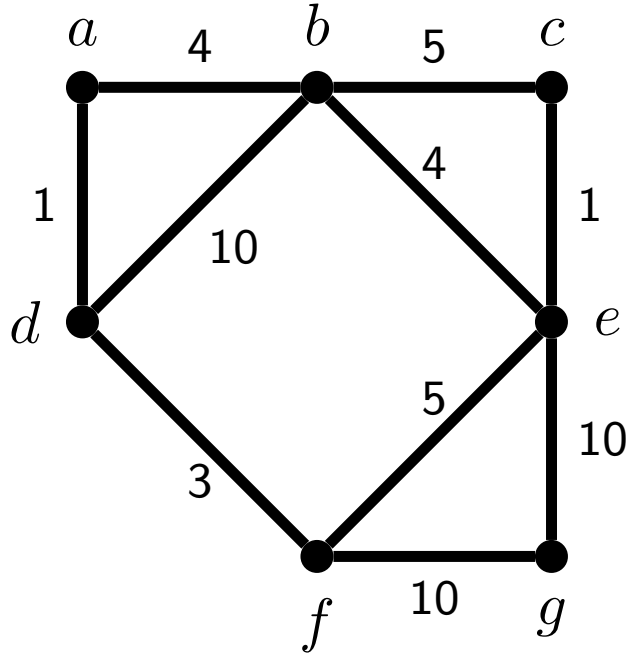

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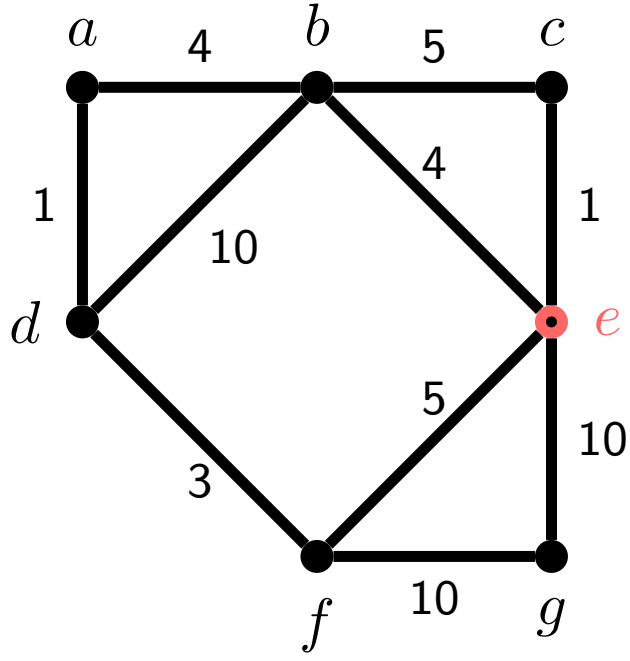

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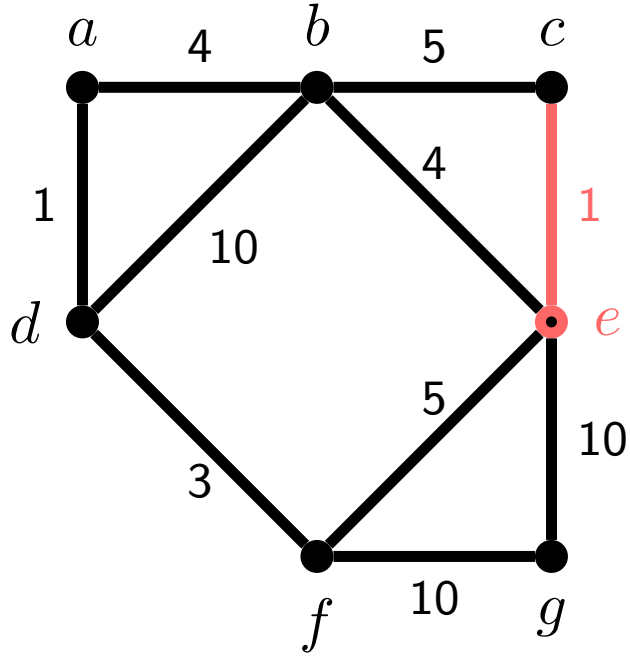

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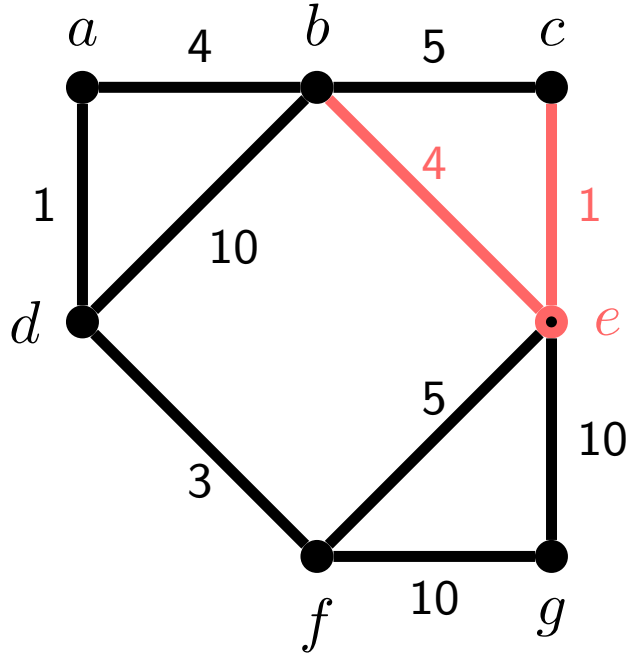

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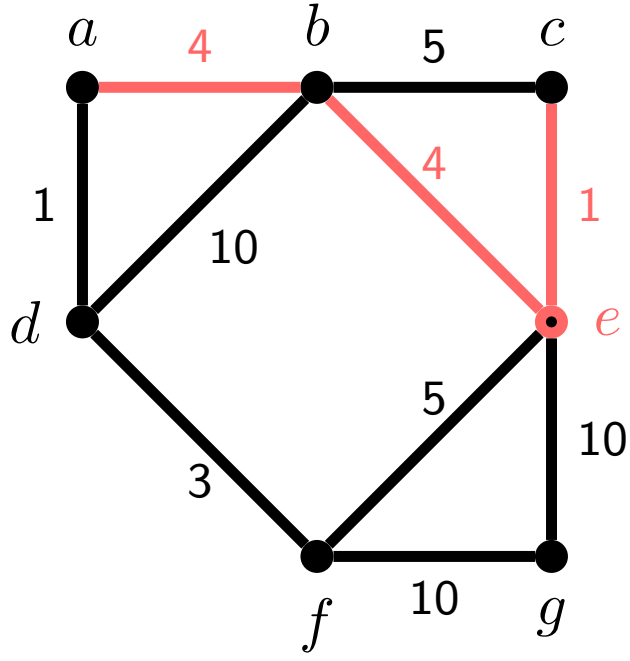

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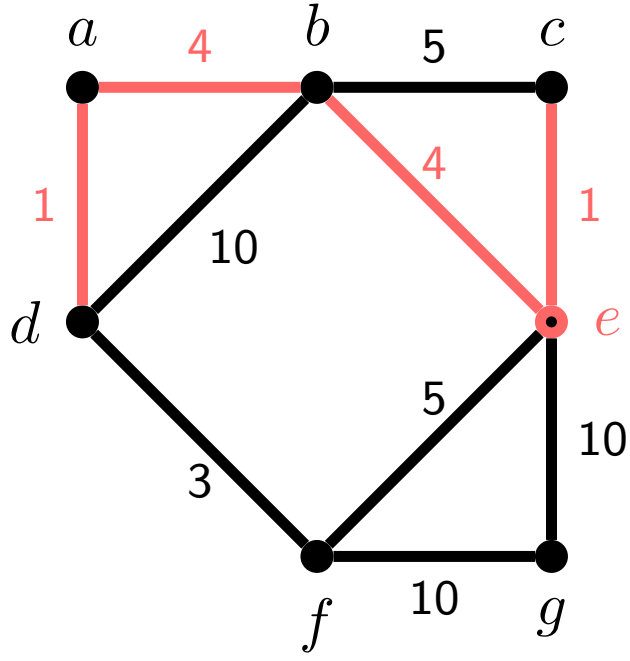

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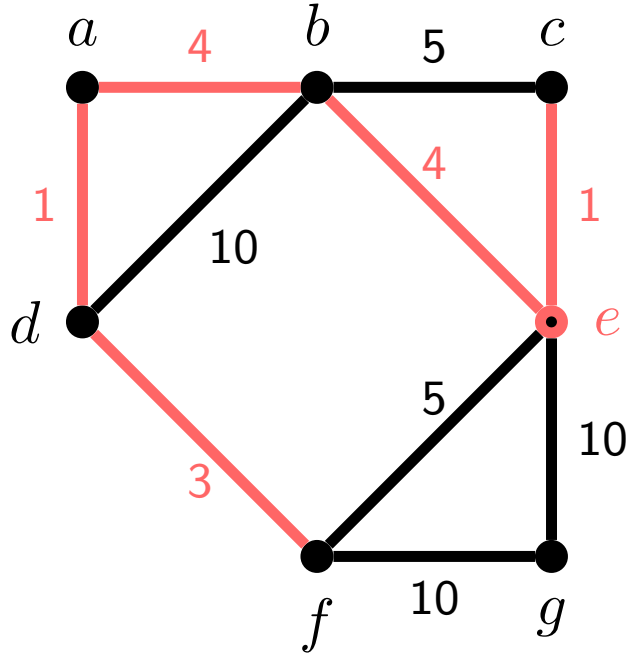

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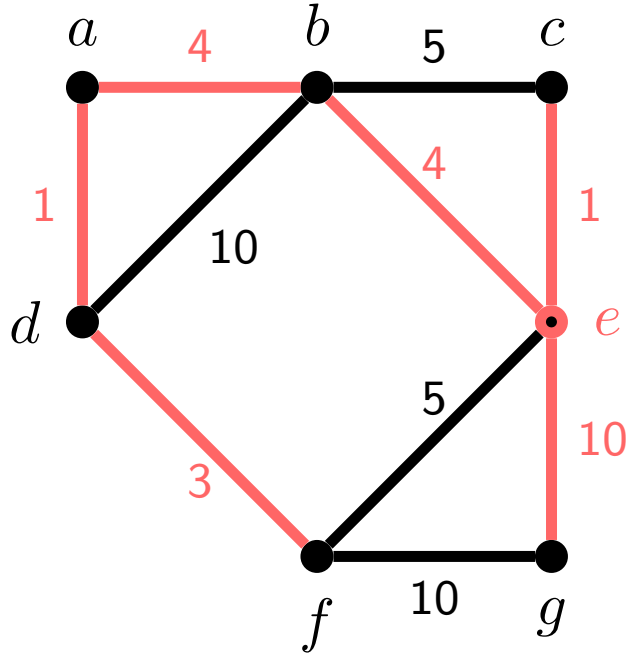
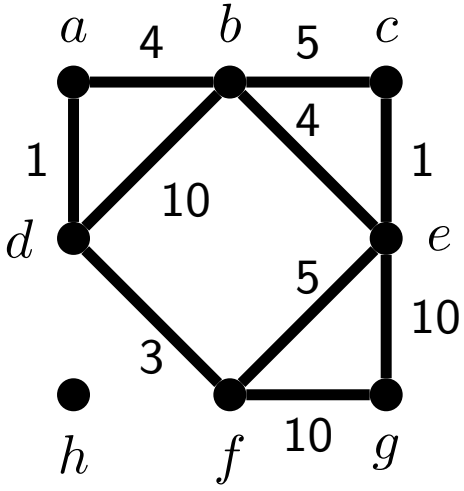


Dijkstra's algorithm (for minimal paths/distance)

Pick a vertex. Let $t(v)$ be the "temporary" distance from that vertex. Iteratively absorb closest vertices possible (minimal $t(v)$ and update distances to $\min(t(v), t(u) + w(uv))$.
(Ties broken arbitrarily)



Distance from e:

add to S	$t(a)$	$t(b)$	$t(c)$	$t(d)$	$t(f)$	$t(g)$	$t(h)$

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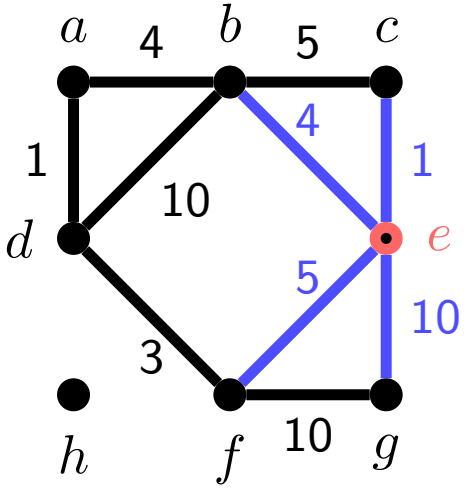

Distance from e:

add to S	$t(a)$	$t(b)$	$t(c)$	$t(d)$	$t(f)$	$t(g)$	$t(h)$
e	∞	4	1	∞	5	10	∞

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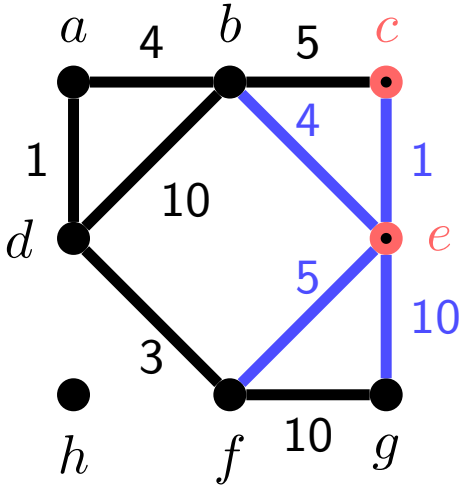

Distance from e:

add to S	$t(a)$	$t(b)$	$t(c)$	$t(d)$	$t(f)$	$t(g)$	$t(h)$
e	∞	4	1	∞	5	10	∞
c	∞	4	1	∞	5	10	∞

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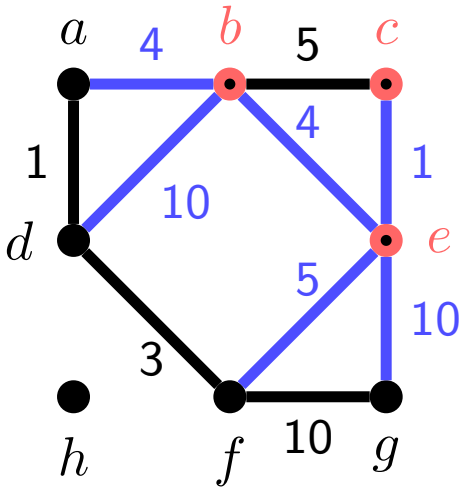

Distance from e:

add to S	$t(a)$	$t(b)$	$t(c)$	$t(d)$	$t(f)$	$t(g)$	$t(h)$
e	∞	4	1	∞	5	10	∞
c	∞	4	1	∞	5	10	∞
b	8	4	1	14	5	10	∞

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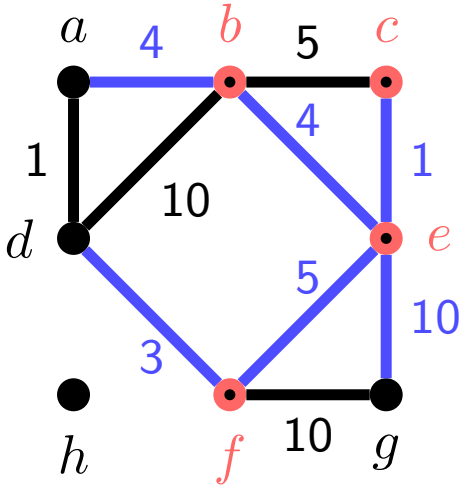

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e	∞	4	1	∞	5	10	∞
c	∞	4	1	∞	5	10	∞
b	8	4	1	14	5	10	∞
f	8	4	1	8	5	10	∞

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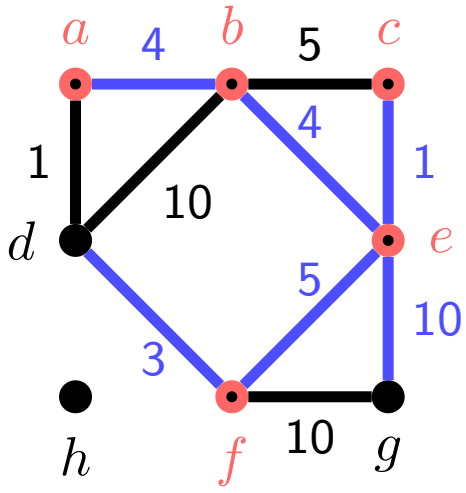

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e	∞	4	1	∞	5	10	∞
c	∞	4	1	∞	5	10	∞
b	8	4	1	14	5	10	∞
f	8	4	1	8	5	10	∞
a	8	4	1	8	5	10	∞

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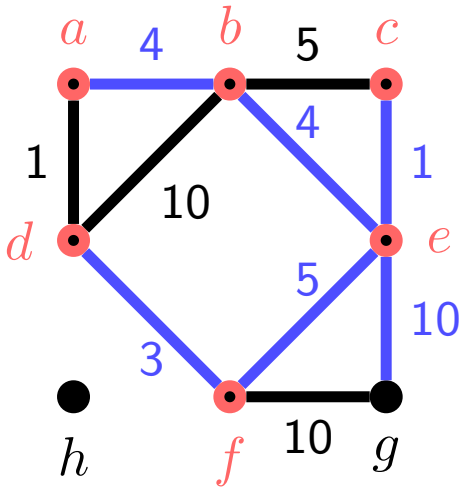

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e	∞	4	1	∞	5	10	∞
c	∞	4	1	∞	5	10	∞
b	8	4	1	14	5	10	∞
f	8	4	1	8	5	10	∞
a	8	4	1	8	5	10	∞
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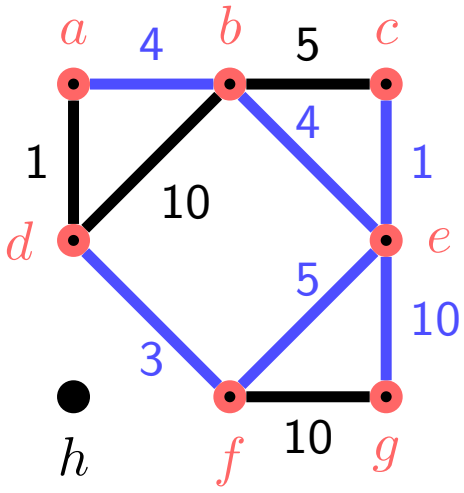

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e	∞	4	1	∞	5	10	∞
c	∞	4	1	∞	5	10	∞
b	8	4	1	14	5	10	∞
f	8	4	1	8	5	10	∞
a	8	4	1	8	5	10	∞
d	8	4	1	8	5	10	∞
g	8	4	1	8	5	10	∞

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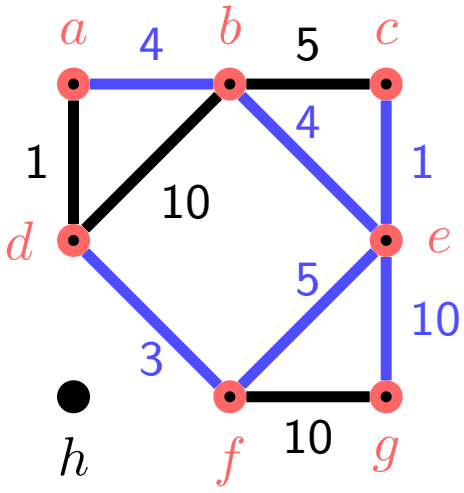

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c	∞	4	1	∞	5	10	∞
b	8	4	1	14	5	10	∞
f	8	4	1	8	5	10	∞
a	8	4	1	8	5	10	∞
d	8	4	1	8	5	10	∞
g	8	4	1	8	5	10	∞

(Stop when $t(v) = \infty$ for all $v \notin S$,
and set $d(e, v) = t(v)$.)