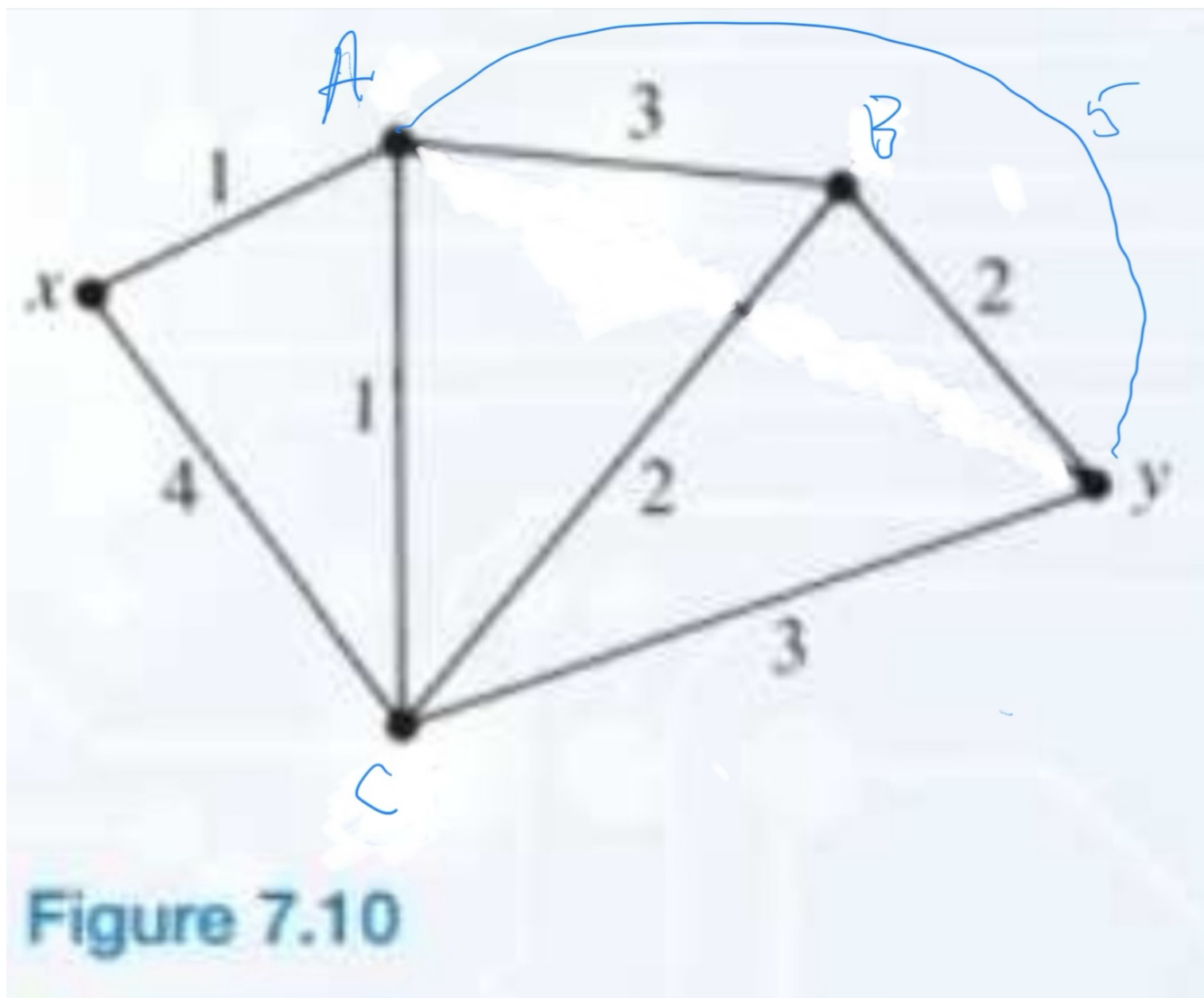




	x	A	B	C	y
x	0	1	∞	4	∞
A	1	0	3	1	5
B	∞	3	0	2	2
C	4	1	2	0	3
y	∞	5	2	3	0

depart

arrival

Looking for shortcuts:

$$d(i,k) + d(k,j) < d(i,j)?$$

?

$d(B,C) = 2$ is $d(B,x) + d(x,C)$ less?

	x	A	B	C	y
x	0	1	∞ ⁴	4 ²	∞ ⁶
A	1	0	3	1	5
B	∞ ⁴	3	0	2	2
C	4 ²	1	2	0	3
y	∞ ⁶	5	2	3	0

Three improvements:
 $d(x,B) > d(x,A) + d(A,B)$
 $= 1 + 3$

Then we step using A ...

No: $d(x,C) = 4$, $d(x,y) = \infty$, $d(x,A) = 1$.

We step through & check each entry. In the first pass, no improvements are made.

	x	A	B	C	y
x	0	1	4	2	6 5
A	1	0	3	1	5 4
B	4	3	0	2	2
C	2	1	2	0	3
y	5 5	4 4	2	3	0

B provides no improvement;
Let's try C.

$x \rightarrow y$

A y are both

updated:

$$6 = d(x, y) > d(x, C) + d(C, y) \\ 2 + 3$$

So $d(x, y) = 5$.

	x	A	B	C	y
x	0	1	4	2	5
A	1	0	3	1	4
B	4	3	0	2	2
C	2	1	2	0	3
y	5	4	2	3	0

Once we've
passed through
all the nodes,

the matrix will
contain shortest
distances, but not
paths.

