

HAC - HW

<u>Pattern</u>	<u>X</u>	<u>Y</u>
a	.8	.7
b	-.1	.2
c	.9	.8
d	0	.2
e	.2	.1

All distances

$$\begin{aligned}
 a-b: & |.8 - (-.1)| + |.7 - .2| = 1.4 & b-e: & |-.1 - .2| + |.2 - .1| = .4 \\
 a-c: & |.8 - .9| + |.7 - .8| = .2 & c-d: & |.9 - 0| + |.8 - .2| = 1.5 \\
 a-d: & |.8 - 0| + |.7 - .2| = 1.3 & c-e: & |.9 - .2| + |.8 - .1| = 1.4 \\
 a-e: & |.8 - .2| + |.7 - .1| = 1.2 & d-e: & |0 - .2| + |.2 - .1| = .3 \\
 b-c: & |-.1 - .9| + |.2 - .8| = 1.6 \\
 b-d: & |-.1 - 0| + |.2 - .2| = .1
 \end{aligned}$$

Clusters

	a	b	c	d	e
a	0	1.4	.2	1.3	1.2
b	1.4	0	1.6	.1	.4
c	.2	1.6	0	1.5	1.4
d	1.3	.1	1.5	0	.3
e	1.2	.4	1.4	.3	0

b-d in cluster
.1

4 clusters

	a	b-d	c	e
a	0	1.3	.2	1.2
b-d	1.3	0	1.5	.3
c	.2	1.5	0	1.4
e	1.2	.3	1.4	0

a-c in cluster
.2

3 clusters

	a-c	b-d	e
a-c	0	1.3	1.2
b-d	1.3	0	.3
e	1.2	<u>.3</u>	0

bd - e for
next cluster
.3

2 clusters

	ac	bde
a-c	0	1.2
bde	<u>1.2</u>	0

ac - bde for
final cluster
1.2

Dendrogram

