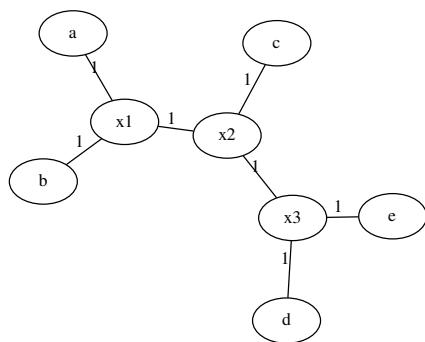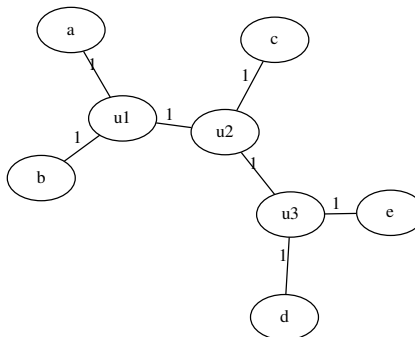## Species tree S
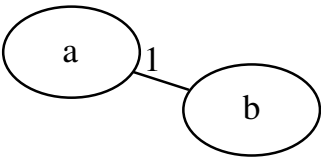

Gene tree G
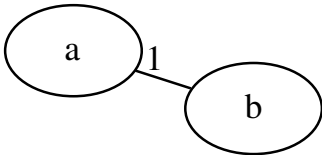

Output

```
edge in S (x1,a) alpha [0,1]; edge in G (u1,a) beta [0,1]; h 0
edge in S (b,x1) alpha [0,1]; edge in G (b,u1) beta [0,1]; h 0
edge in S (x2,x1) alpha [0,1]; edge in G (u2,u1) beta [0,1]; h 0
edge in S (c,x2) alpha [0,1]; edge in G (c,u2) beta [0,1]; h 0
edge in S (x3,x2) alpha [0,1]; edge in G (u3,u2) beta [0,1]; h 0
edge in S (d,x3) alpha [0,1]; edge in G (d,u3) beta [0,1]; h 0
edge in S (e,x3) alpha [0,1]; edge in G (e,u3) beta [0,1]; h 0
```
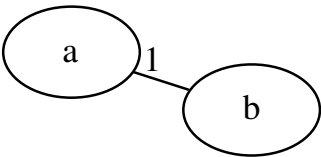
Species tree S **Gene tree** G
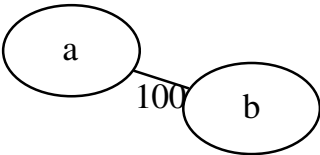

Output

```
edge in S (b,a) alpha [0,1]; edge in G (b,a) beta [0,1]; h 0
```
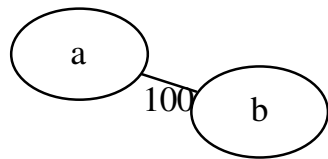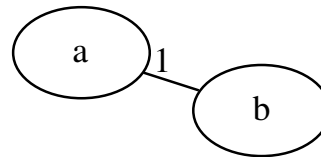
Species tree S **Gene tree** G

Output

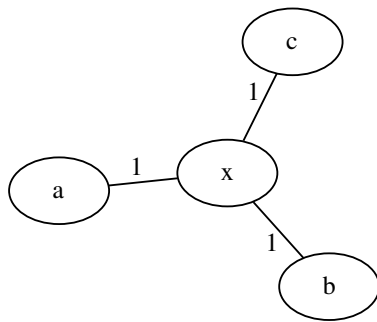edge in S (b,a) alpha [0,1]; edge in G (b,a) beta [49.5,50.5]; h 49.5

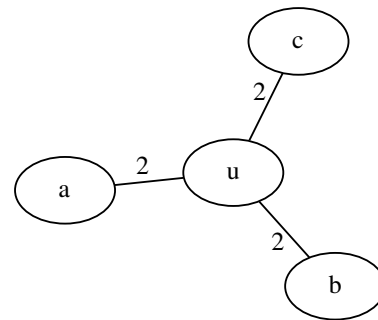**Species tree** S

Gene tree G

Output

```
no solution
```

Species tree S

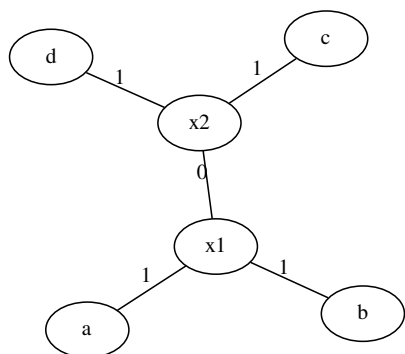## Gene tree G

Output

```
edge in S (x,a) alpha [0,1]; edge in G (u,a) beta [0,1]; h 1
edge in S (b,x) alpha [0,1]; edge in G (b,u) beta [1,2]; h 1
edge in S (c,x) alpha [0,1]; edge in G (c,u) beta [1,2]; h 1
```

Species tree S

Gene tree G
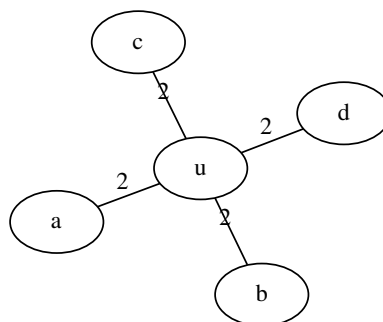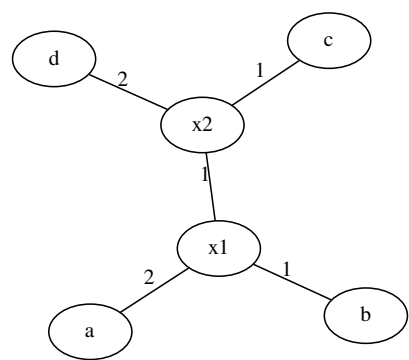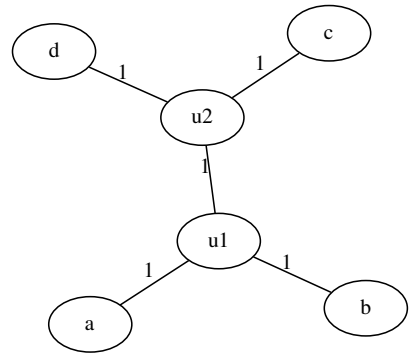

Output

```
edge in S (x1,a) alpha [0,1]; edge in G (u,a) beta [0,1]; h 1
edge in S (b,x1) alpha [0,1]; edge in G (b,u) beta [1,2]; h 1
edge in S (x2,x1) alpha [0,0]; edge in G (u,a) beta [0,0]; h 1
edge in S (c,x2) alpha [0,1]; edge in G (c,u) beta [1,2]; h 1
edge in S (d,x2) alpha [0,1]; edge in G (d,u) beta [1,2]; h 1
```
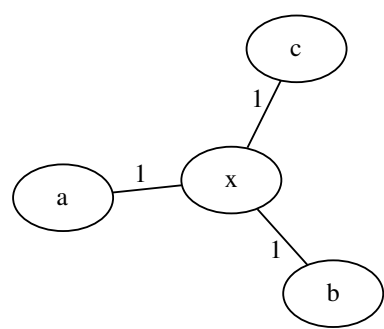
Species tree S

Gene tree G
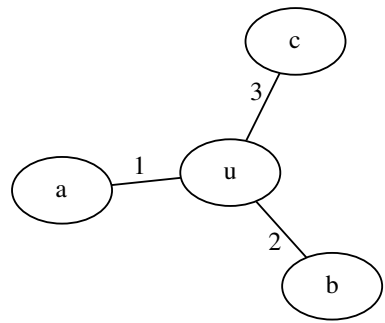

Output

```
no solution
```

Species tree S

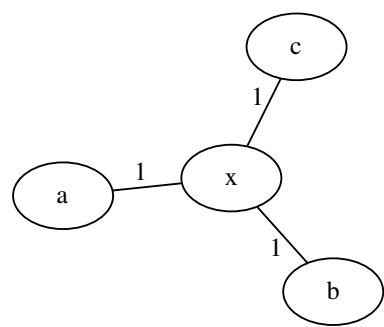

Gene tree G

Output

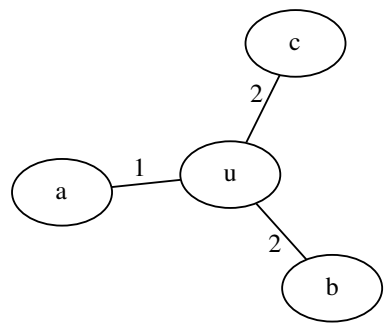edge in S (x,a) alpha [0.5,0.5]; edge in G (c,u) beta [2.5,2.5]; h 1
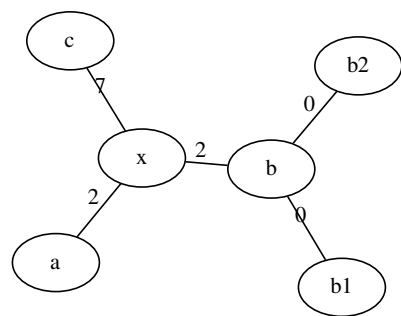
Species tree S **Gene tree** G

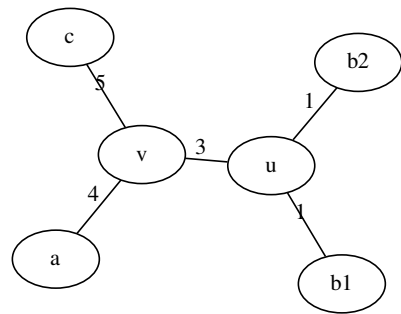## Output

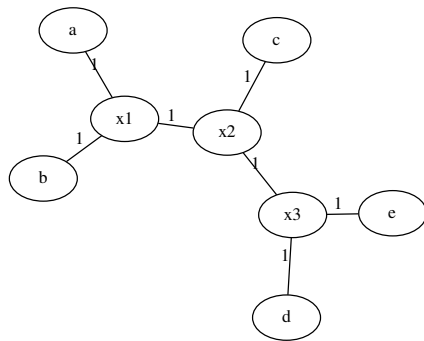edge in S (x,a) alpha [0.5,1]; edge in G (u,a) beta [0,0.5]; h 0.5

Species tree S

Gene tree G

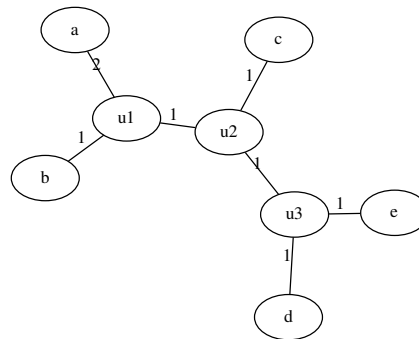## Output

edge in S (c,x) alpha [0,5]; edge in G (c,v) beta [0,5]; h 0

Species tree S

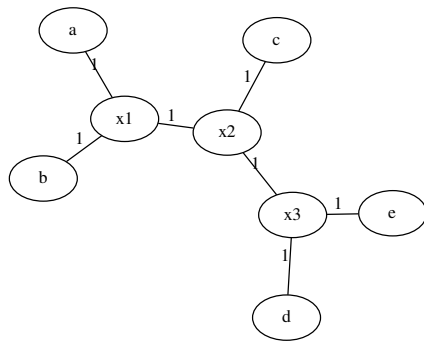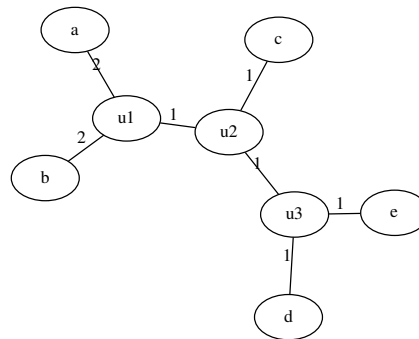

Gene tree G

Output

```
edge in S (x1,a) alpha [0,1]; edge in G (u1,a) beta [0.5,1.5]; h 0.5
edge in S (b,x1) alpha [1,1]; edge in G (u1,a) beta [0.5,0.5]; h 0.5
edge in S (x2,x1) alpha [1,1]; edge in G (u1,a) beta [0.5,0.5]; h 0.5
```
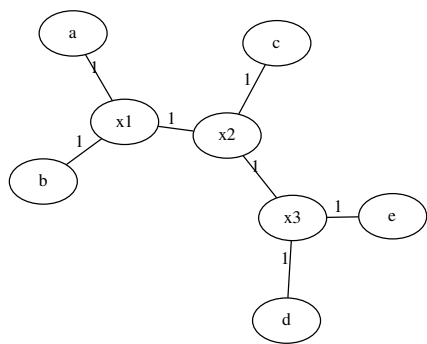
Species tree S

Gene tree G

Output

```
edge in S (x2,x1) alpha [0,0.5]; edge in G (u2,u1) beta [0.5,1]; h 0.5
edge in S (c,x2) alpha [1,1]; edge in G (u2,u1) beta [0.5,0.5]; h 0.5
edge in S (x3,x2) alpha [1,1]; edge in G (u2,u1) beta [0.5,0.5]; h 0.5
```

Species tree S

Gene tree G

Output

edge in S (c,x2) alpha [0,0.5]; edge in G (c,u2) beta [0.5,1]; h 0.5

Species tree S

Gene tree G

Output

```
edge in S (x3,x2) alpha [0,0.5]; edge in G (u3,u2) beta [0.5,1]; h 0.5
edge in S (d,x3) alpha [1,1]; edge in G (u3,u2) beta [0.5,0.5]; h 0.5
edge in S (e,x3) alpha [1,1]; edge in G (u3,u2) beta [0.5,0.5]; h 0.5
```
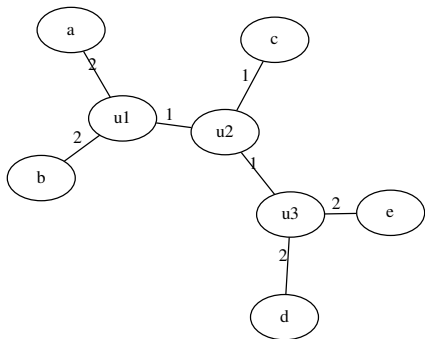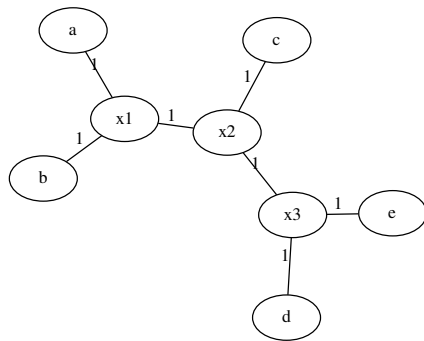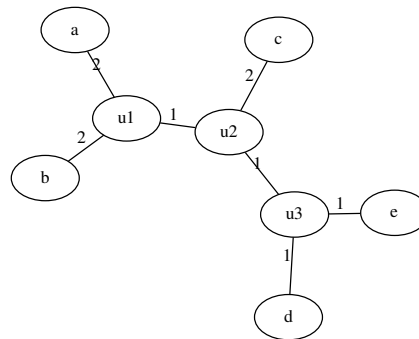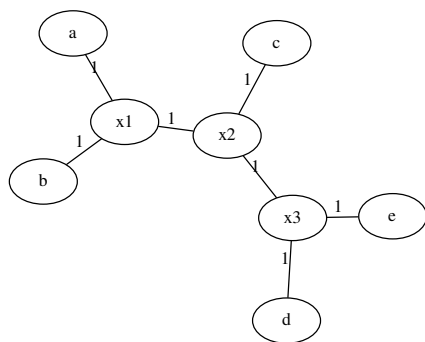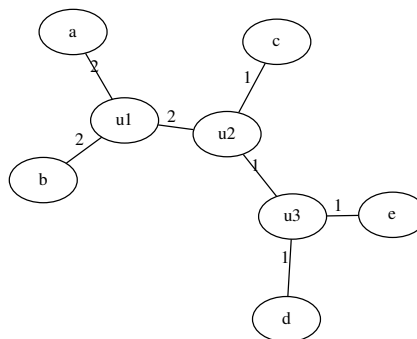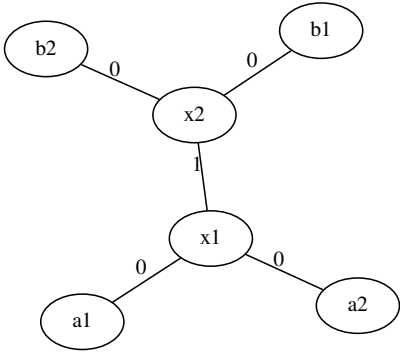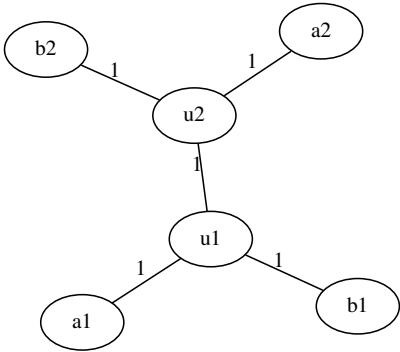
Species tree S Gene tree G

Output

```
edge in S (x1,a) alpha [0,1]; edge in G (u1,a) beta [0,1]; h 1
edge in S (b,x1) alpha [0,1]; edge in G (b,u1) beta [1,2]; h 1
edge in S (x2,x1) alpha [0,1]; edge in G (u2,u1) beta [1,2]; h 1
edge in S (c,x2) alpha [1,1]; edge in G (u2,u1) beta [1,1]; h 1
edge in S (x3,x2) alpha [1,1]; edge in G (u2,u1) beta [1,1]; h 1
```
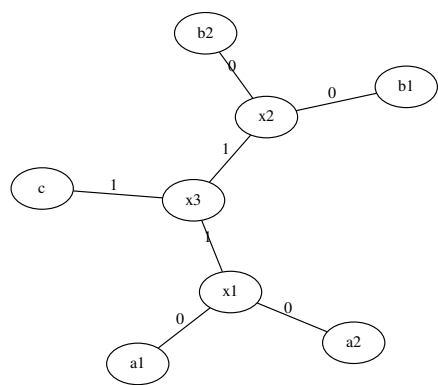
Species tree S

Gene tree G

Output
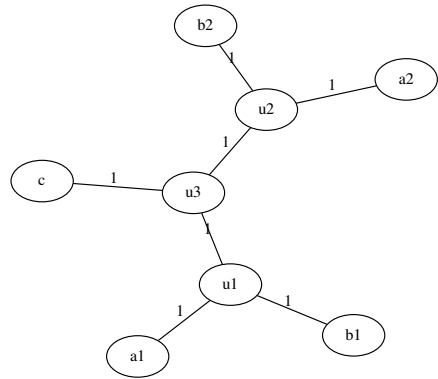
edge in S (x2,x1) alpha [0.5,0.5]; edge in G (u1,u2) beta [0.5,0.5]; h 1

Species tree S

Gene tree G

Output

edge in S (c,x3) alpha [0,0.5]; edge in G (c,u3) beta [0.5,1]; h 0.5