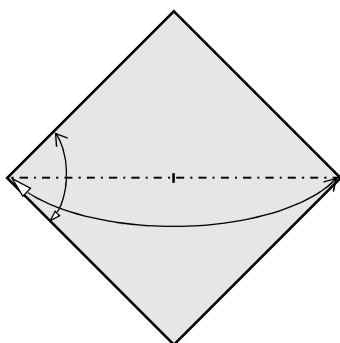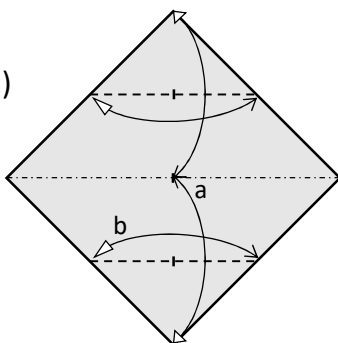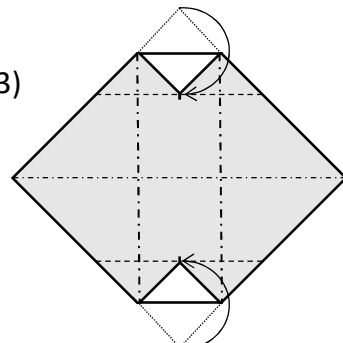# House, bi-coloured

1)

Roof side up.
Mountain fold and
unfold. Mark center
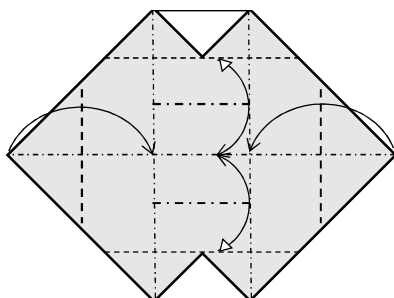point.

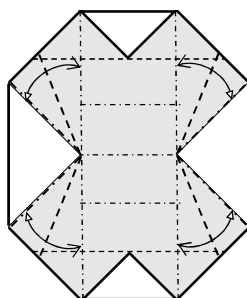**2)**

(a) Fold and unfold.
(b) Mark centers.

3)

Valley fold top and
bottom points.
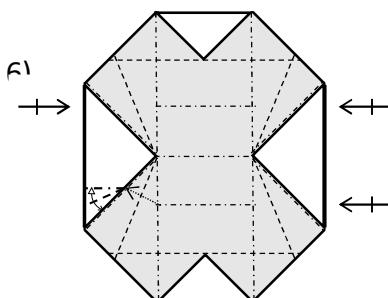Mountaiun fold and
unfold vertical
creases.

4)

Valley fold side points.
Mountain fold and
unfold horizontally
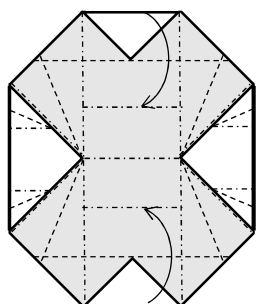between creases of
step 3.

5)

Make mountain folds
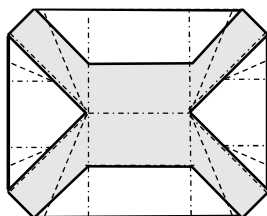along new inner edges.
Add valley folds.

6)

Map endpoint of new
horizontal crease from
step 4 to next mountain
fold of step 5. Make
valley fold.
Repeat at other sides.

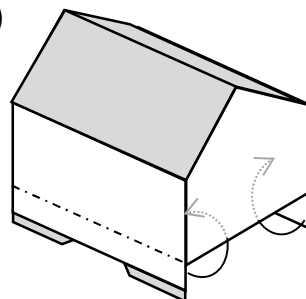**7)**

Valley fold along
existing creases.

8)

Now fold along
existing creases,
according their
orientation to bring
the house into shape.

9)

Finally, valley fold
excess paper inside.

Completed house.
For roof shingles,
see next side.

Roof Shingles for Bi-coloured House

For making the roof shingles, I use Robert Lang's technique to add scales to a Koi, as described on page 218 in it's book "Origami Design Secrets – Mathematical Methods for an Ancient Art". The roof area, which should contain the shingles, is shown below. Make the orthogonal mountain/valley crease pairs parallel to the paper sides and let them cover a bit more than the roof area. The reason behind: the multiple crease pairs make the region, where they are located, smaller compared to the uncovered regions. Hence, the lower edges of the roof will remain uncovered if you stop with the creases exactly at roof borders.
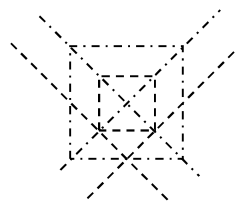
10)

Suggested zone for shingles

Roof area
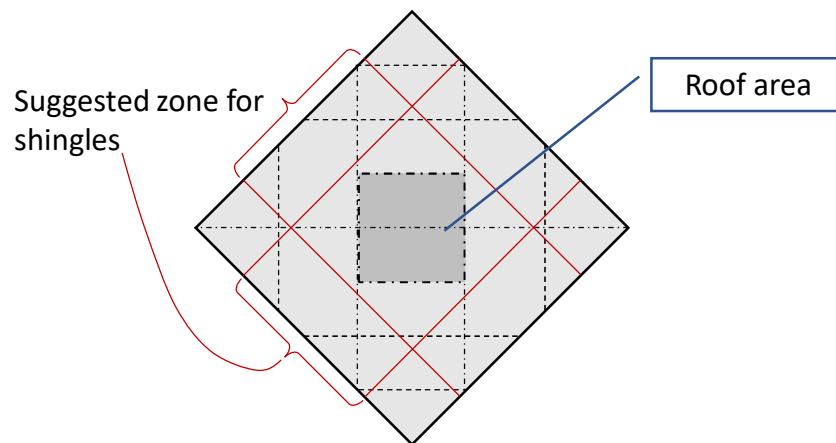
For making scales, a series of parallel pleats (pairs of mountain/valley-folds) in one direction as well as in orthogonal direction. Then, at each crossing of pleats, a scale tile can be folded.
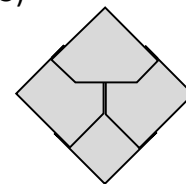
11)
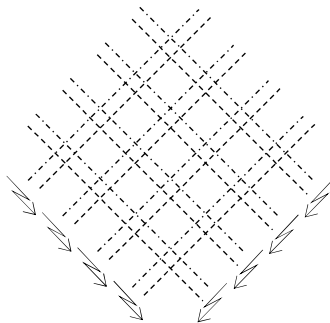
12)

13)

Of course, we want to have the shingles showing away from the roof ridge. In our case this is the horizontal diagonal crease in the diagrams for folding the house. This means we have to switch the mountain/valley-fold order along this crease. On way to do this is shown in figure 14:
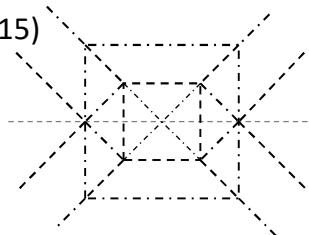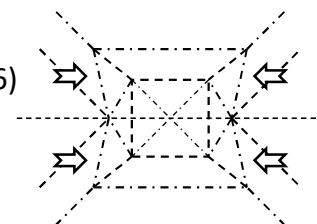
14)

A solution which I like for folding the intersections at the ridge, shown from underneath!

15)

16)
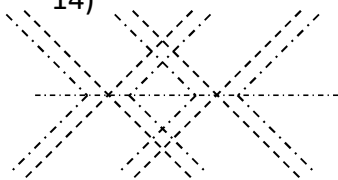
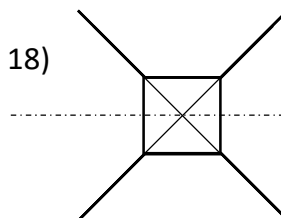Valley folds crossing the roof ridge, mountain folds end there.

Push in sides of outer square while make the diagonal pleats.

17)

View from below.

18)

View from top. (Roof side)