1. The following are rosette patterns. On each one, indicate the following with colored ink:
   - all lines of symmetry;
   - the shortest rotation preserving the pattern. Write the angle of rotation beside the arrow.
Below the figure, write the group that preserves the pattern.
2. The following are frieze patterns. On each one, indicate the following with colored ink:
   • The shortest translation, $\tau_v$, that preserves the pattern.
   • All points of symmetry.
   • All lines of symmetry.
   • A fundamental region, $R$, for $\mathcal{T}$.
   • A fundamental region, $S$ for $\mathcal{F}$.

(a) 

(i) Is there a glide reflection whose square is $\tau_v$?
(ii) Is there a glide reflection whose square is $\tau_{2v}$?
(iii) What is the isotropy subgroup of a point, $A$, of symmetry, provided such exists?
(iv) Which of the seven listed groups is $\mathcal{F}$?

(b) 

(i) Is there a glide reflection whose square is $\tau_v$?
(ii) Is there a glide reflection whose square is $\tau_{2v}$?
(iii) What is the isotropy subgroup of a point, $A$, of symmetry, provided such exists?
(iv) Which of the seven listed groups is $\mathcal{F}$?

(c) 

(i) Is there a glide reflection whose square is $\tau_v$?
(ii) Is there a glide reflection whose square is $\tau_{2v}$?
(iii) What is the isotropy subgroup of a point, $A$, of symmetry, provided such exists?
(iv) Which of the seven listed groups is $\mathcal{F}$?