Topics in Geometry 05-3, Quiz 4, 7/11/5

Name: 
Signature: 

Question 1

Let $A = [3, 1], B = [5, 3], C = [5, -1], P = [-2, 1], Q = [0, -1]$ and $R = [-4, -1]$ be points in the plane.
Calculate the lengths of the sides of the triangles $ABC$ and $PQR$ and hence show that the triangles are congruent.
Plot the triangles $ABC$ and $PQR$ and describe a Euclidean transformation $T$ that maps $ABC$ to $PQR$.
Does there exist a Euclidean transformation mapping $ABC$ to $PRQ$?
Explain your answer.

Question 2

Describe the symmetries of the following (infinite) frieze patterns:

- $\cdots SSSSS \cdots$
- $\cdots STSTSTST \cdots$
- $\cdots <><><><><><>< \cdots$