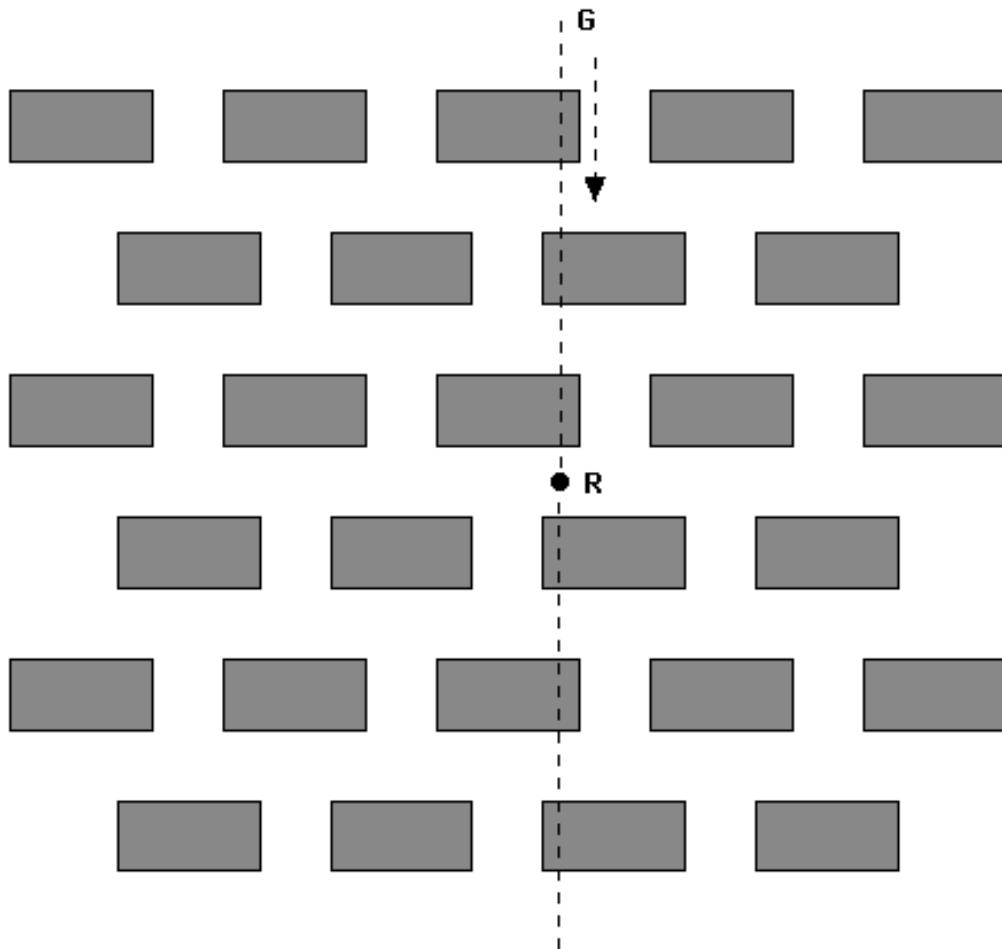


MAT 203 -- Hour Exam #1

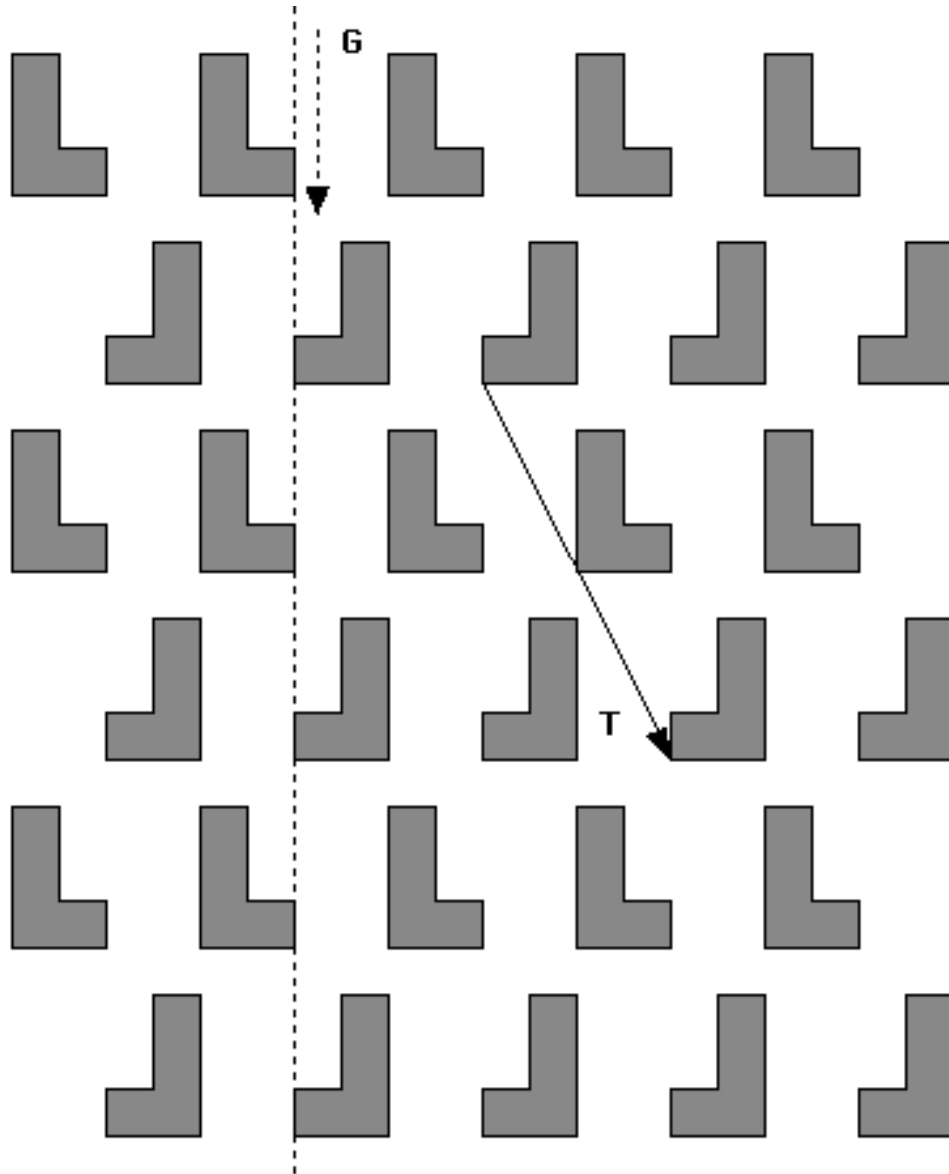
(1) Determine the indicated compositions:

(a)



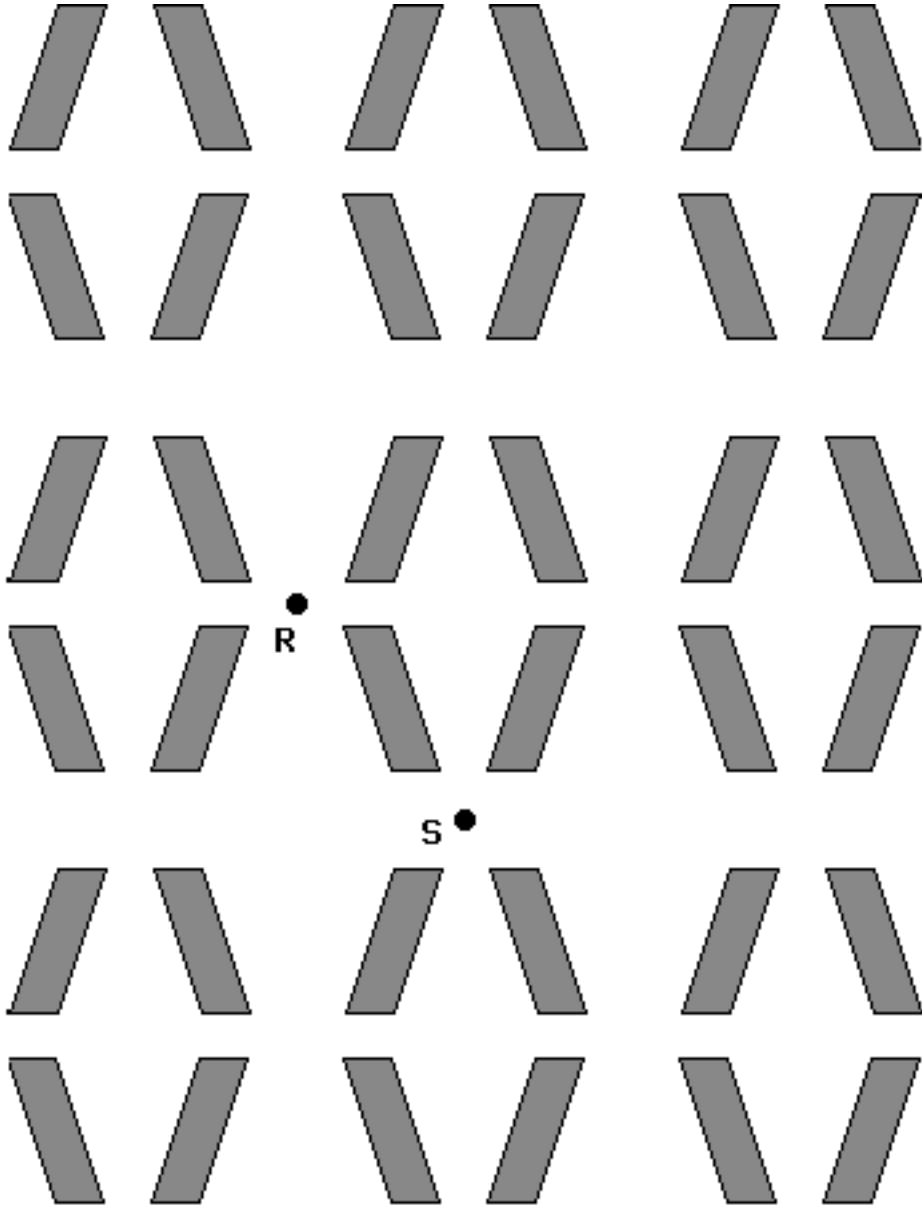
R:G

(b)



$G \cdot T$

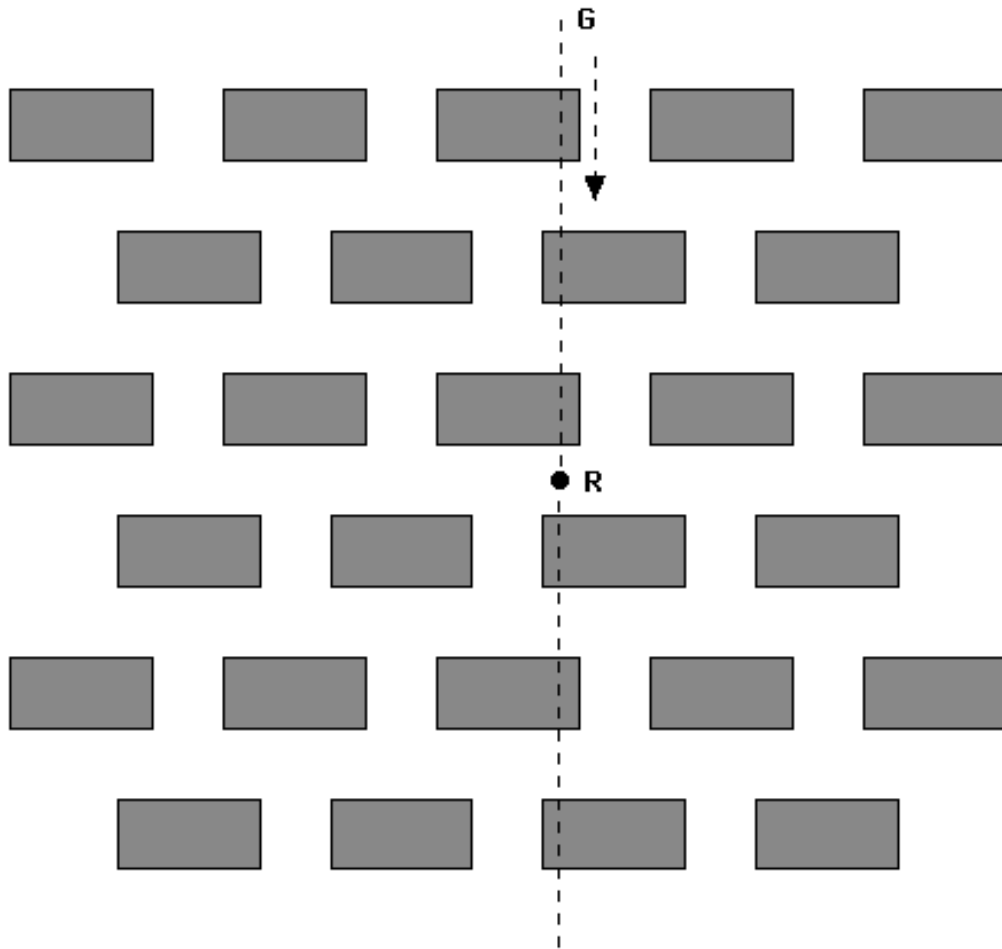
(c)



$R * S$

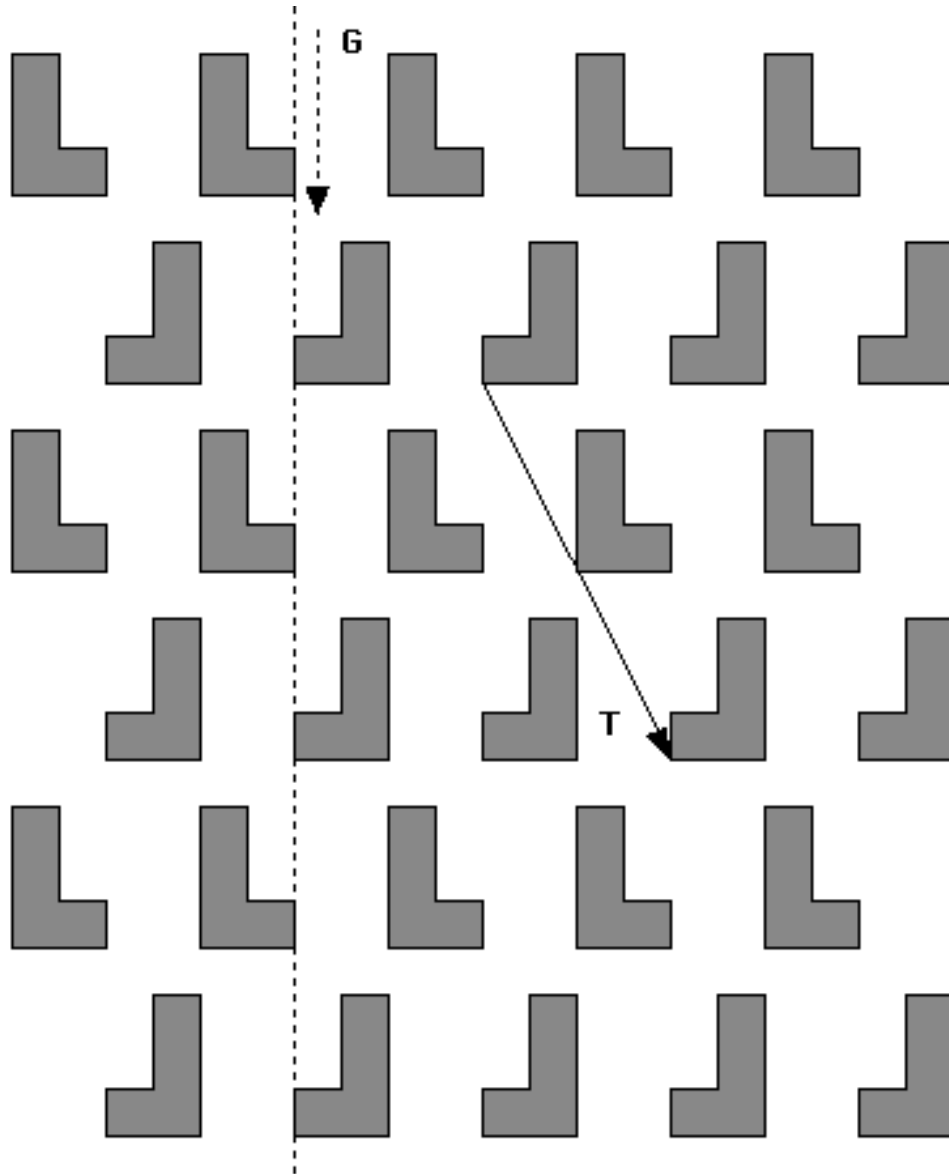
(2) Determine the following images:

(a)



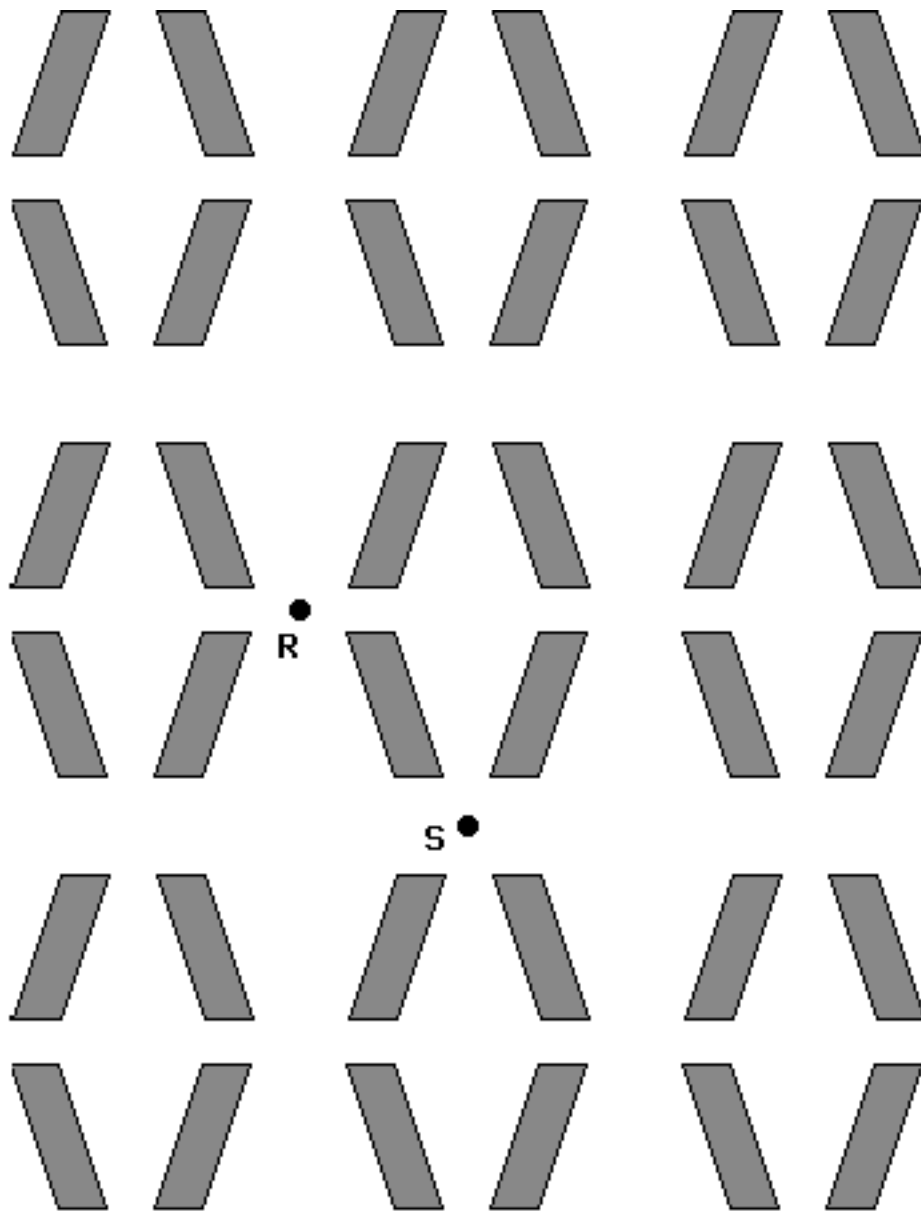
$R[G]$

(b)



G[T]

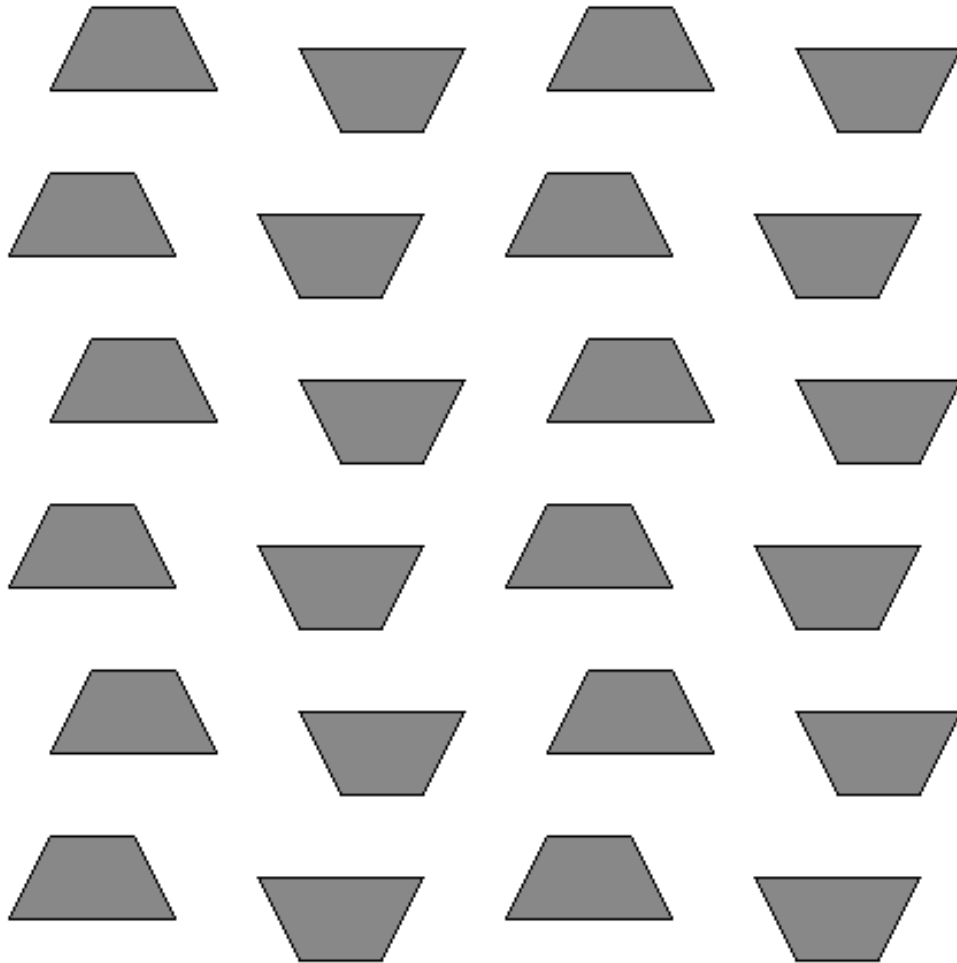
(c)



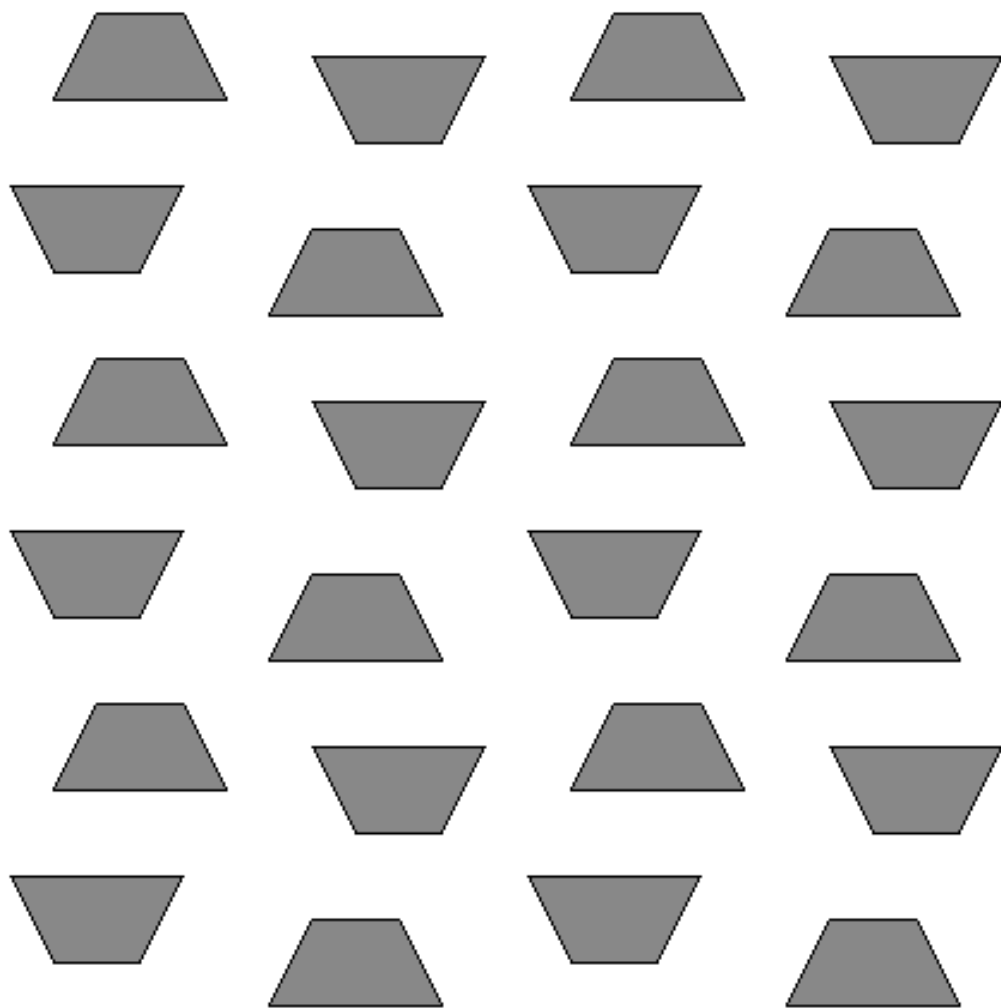
R[S]

(3) Classify the following wallpaper patterns, justifying your answer in detail (by indicating a few crucial isometries).

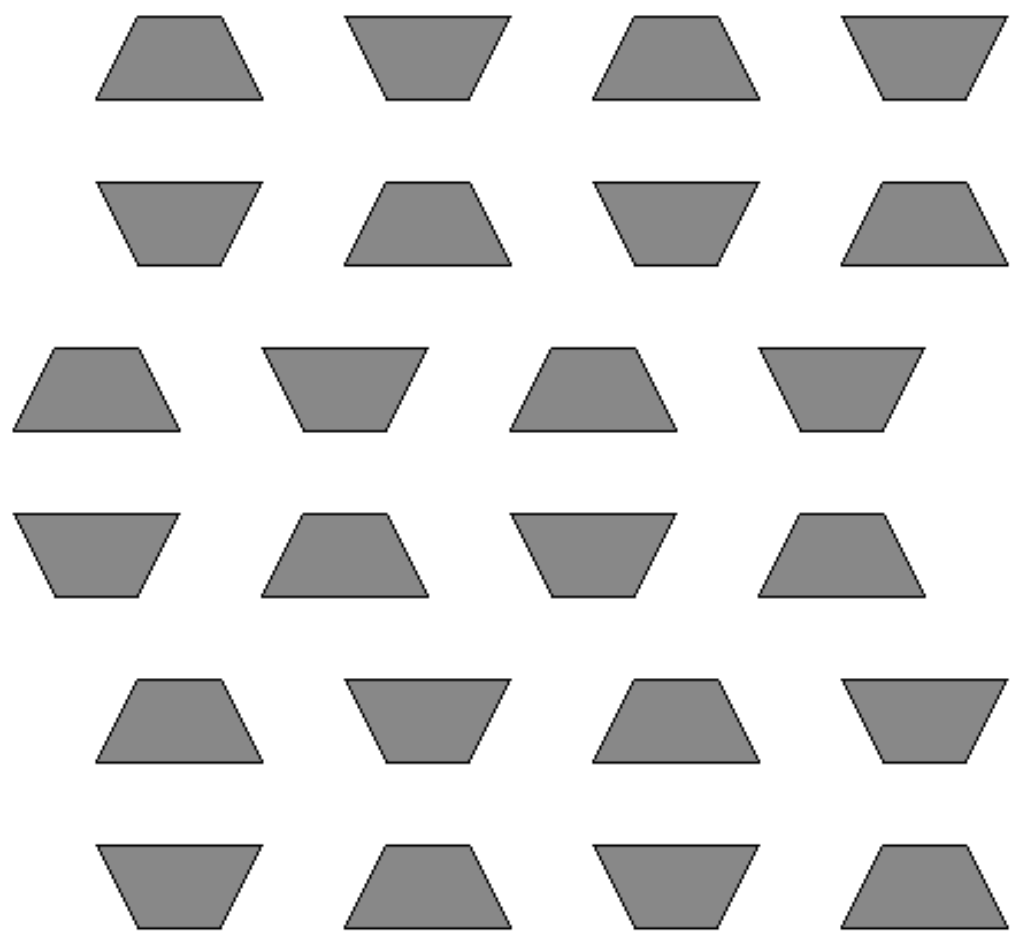
(a)



(b)



(c)



(d)

