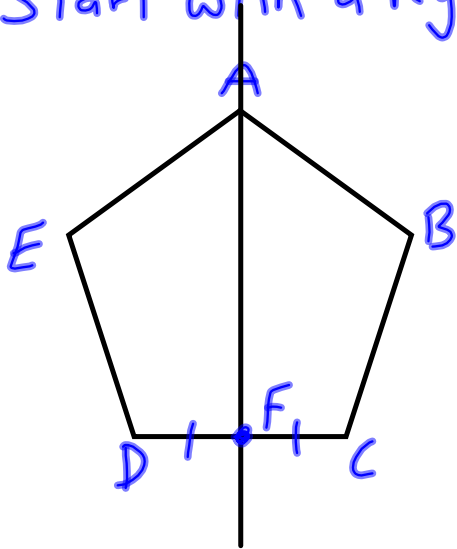


## Math 7.5: Reflections and Line Symmetry

Start with a regular pentagon ABCDE



Question: Can I draw a line that cuts the pentagon into two congruent pieces?

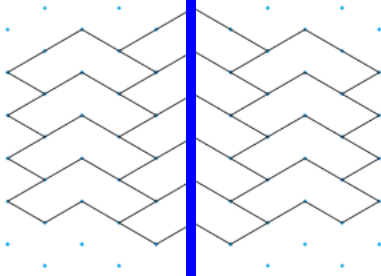
Ans) Pentagon ABCDE has 1 reflection line that cuts the pentagon into two congruent parts.

\* Line AF is called a line of symmetry. AF bisects DC, so  $DF = CF$ . These two parts are called equidistant.

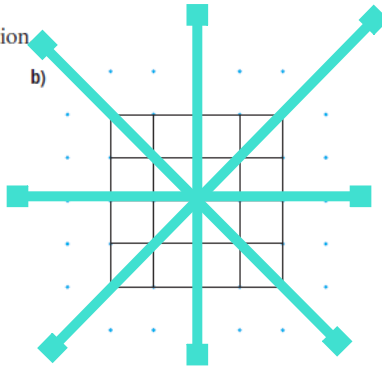
Example #1: pg 354 (See diagram in book)

Identify the lines of symmetry in each tessellation

a)

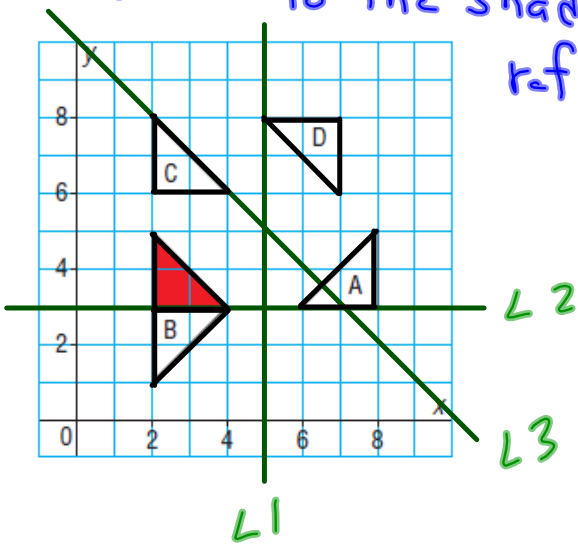


b)



Ans) (a) This tessellation has one line of symmetry  
(b) " " " four " " "

Example: Identify the triangles that are related to the shaded triangle by a line of reflection.



\* See Separate Graph Sheet.

∴ A, B & D are related triangles.

Example #3: Quadrilateral ABCD is part of a larger shape. Draw the image of each reflection below.

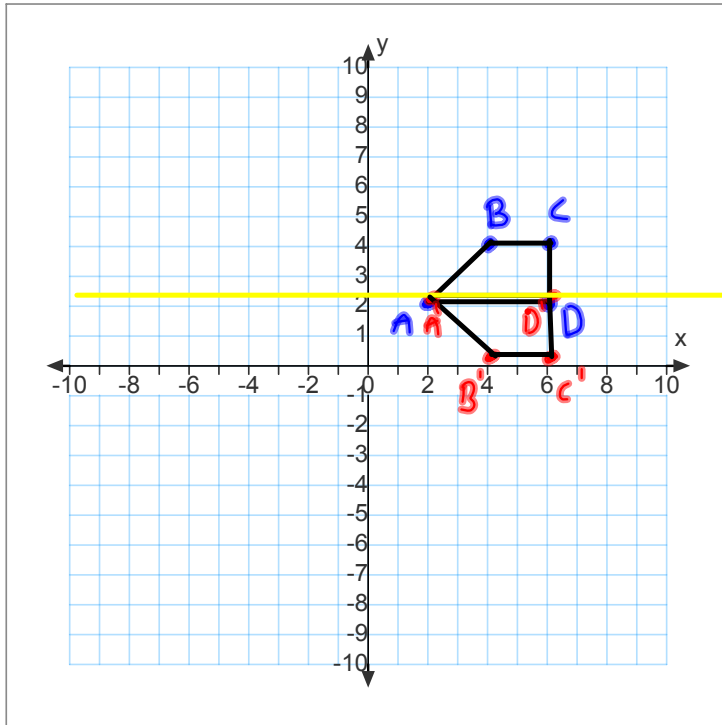
- Write the coordinates of the image.
- Describe the larger shape and its symmetry.

(a) A reflection in the horizontal line passing through 2 on the y-axis.

(b) A reflection in the vertical line passing through 6 on the x-axis.

(c) A reflection in an oblique line passing through the points  $(0,0)$  +  $(6,6)$ .

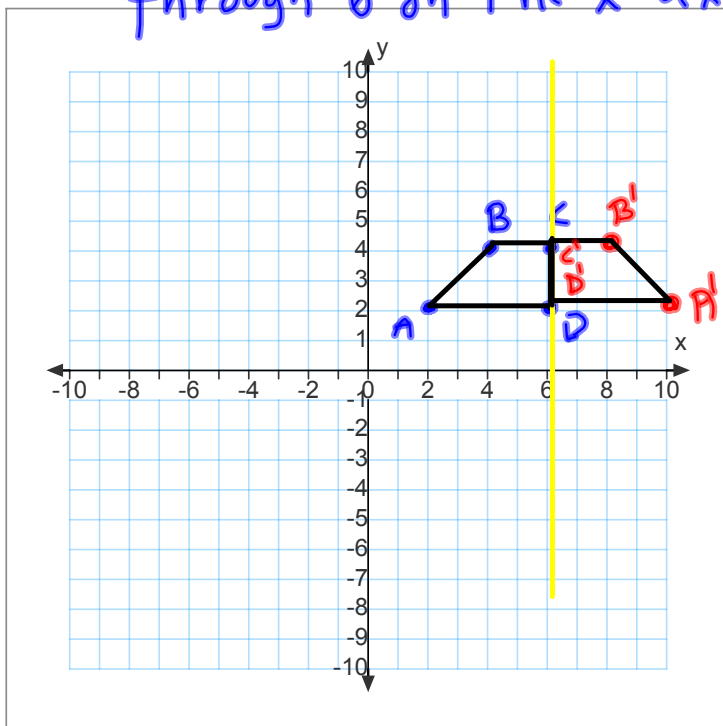
(a) Horizontal Reflection passing through 2 on y-axis



Original	Image
A(2,2)	A'(2,2)
B(4,4)	B'(4,0)
C(6,4)	C'(6,0)
D(6,2)	D'(6,2)

Pentagon

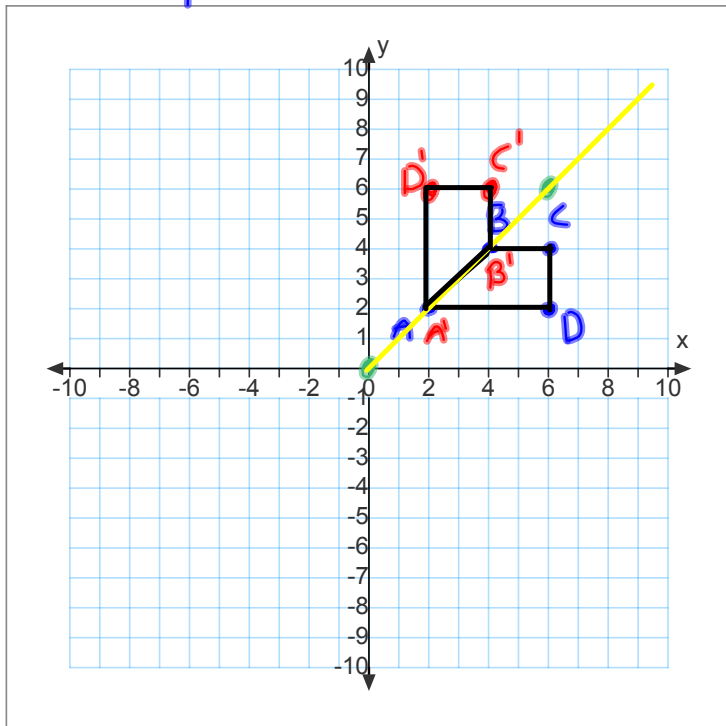
(b) A reflection in the vertical line passing through 6 on the x-axis.



Original	Image
$A(2,2)$	$A'(10,2)$
$B(4,4)$	$B'(8,4)$
$C(6,4)$	$C'(6,4)$
$D(6,2)$	$D'(6,2)$

Trapezoid

(c) A reflection in an oblique line passing through the points  $(0,0)$  +  $(6,6)$ .



Original	Image
$A(2,2)$	$A'(2,2)$
$B(4,4)$	$B'(4,4)$
$C(6,4)$	$C'(4,6)$
$D(6,2)$	$D'(2,6)$

Hexagon

Homwk:  
p 358-359  
5, 8