

VBE - Geometry II

Wednesday 5-9-12

ACT
PRACTICE

① $f(x) = \frac{x^3 + \frac{5}{8}}{x + \frac{1}{4}} ; f(\frac{1}{2}) = ?$

ANS $f(\frac{1}{2}) = \frac{\frac{1}{8} + \frac{5}{8}}{\frac{1}{2} + \frac{1}{4}}$

$$= \frac{\frac{6}{8}}{\frac{3}{4}} = \frac{3}{4} \cdot \frac{4}{3}$$

$$= \boxed{1}$$

• Return/Markup Quiz 5

Ch. 9 TRANSFORMATIONS

A change to a geometric shape.

The "STARTING" shape is called

A pre image the final shape is
↑
before

simply the image.

Transformations apply to 2D (x,y) shapes and 3D (x,y,z) shapes but most of Ch. 9 involves 2D.

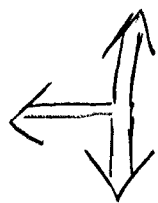
There are 4 basic transformations we will study in Ch. 9

<u>TRANSFORMATION</u>	<u>FANCY Geometry Name</u>
Mirror image →	reflect across a line
SLIDE →	<u>translate</u>
turn →	rotate
SHRINK or ENLARGE →	dilate

(EX)

Preimage

Image



REFLECTION
AND
dilation
(bigger)



Rotation
AND
translation



dilation (smaller)
AND
translation



translation

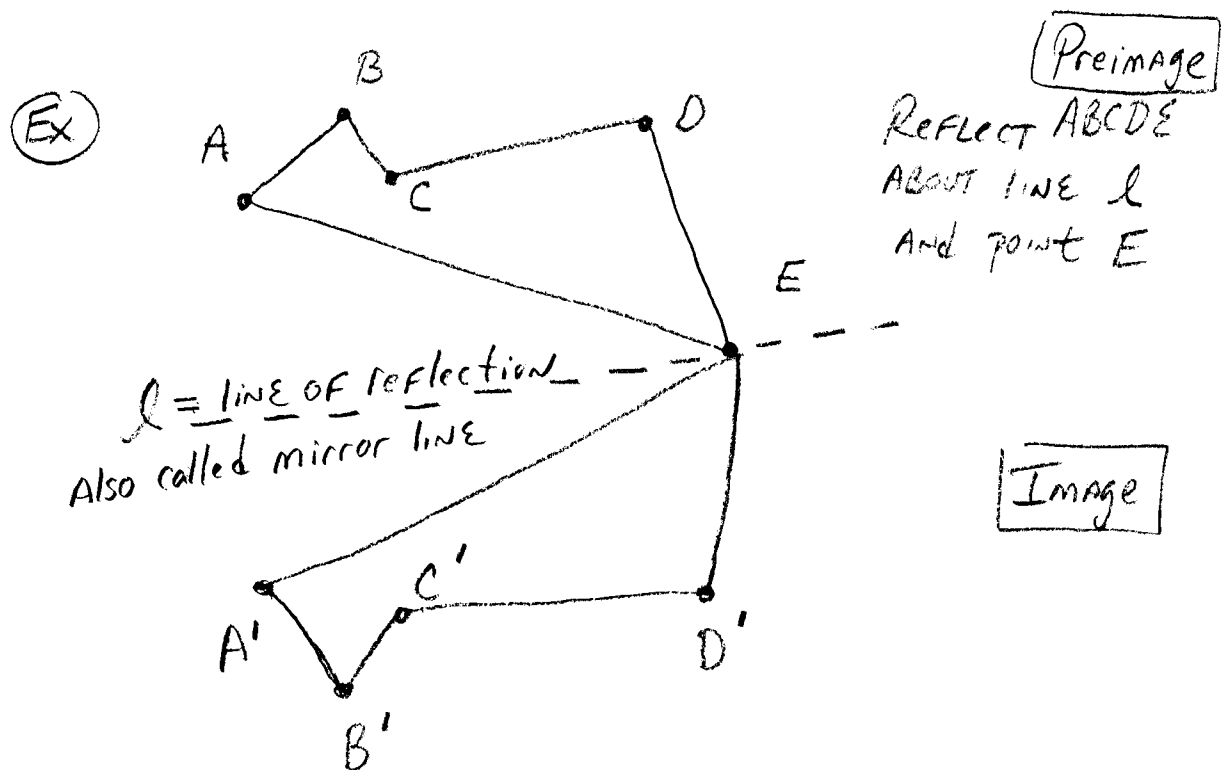


Ch 9-1 Reflections

IN 2D A REFLECTION may be

About A point or about a line.

$\Rightarrow$ REFLECTED BY A point or by a line

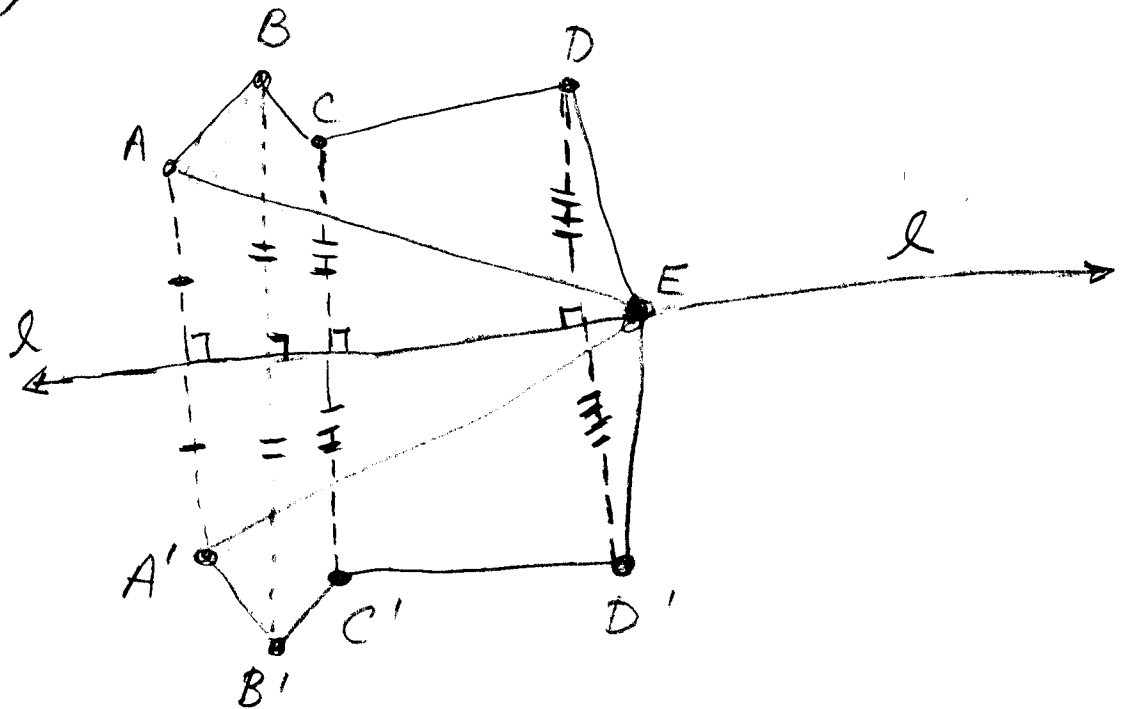


NOTES: l is the "fold" line

Corresponding points are
labeled A' , A'' , A''' , etc...

Preimage and Image for point E
are the same.

Line segments connecting corresponding point $\textcircled{EX} \overline{AA'}, \overline{BB'}, \overline{CC'}, \overline{DD'}$ are perpendicular to line l and are bisected by it.



Pre image $\cong$ image For Reflection

$\therefore$ This is called a

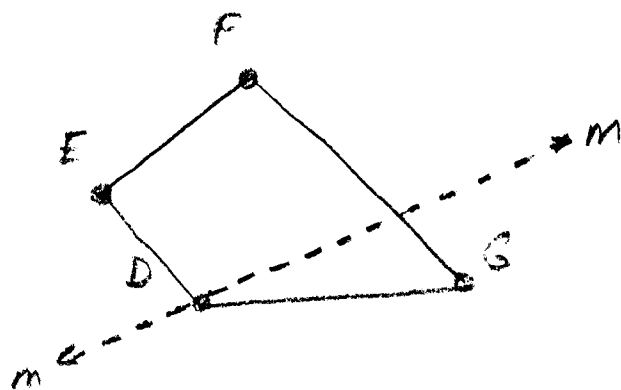
congruent transformation or isometry

Reflect, translate, and rotate are all congruent transformations. Dilation is NOT.

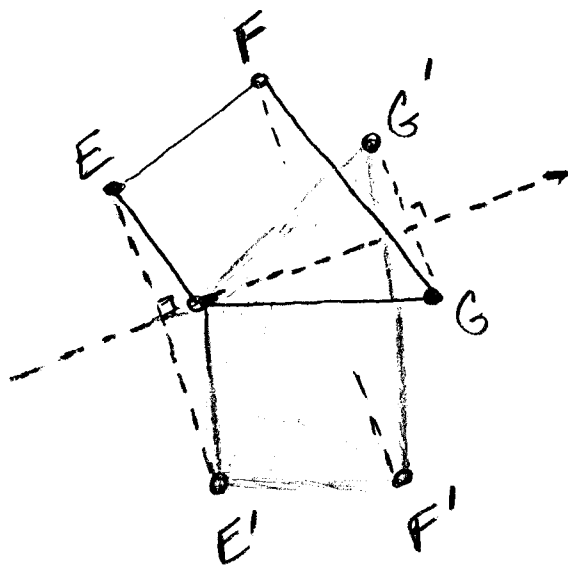
The line of Reflection may be
"inside" the preimage.

EX1
pg 464

REFLECT $DEFG$ in line m
"about"

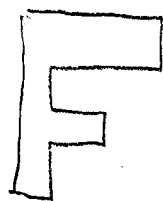


D is on line m . Draw $\perp$ line segments
to line m from E, F, G . E', F', G' ARE
SAME distance from line of REFLECTION



Shapes may have NONE, or more than ONE, lines of symmetry = fold lines.

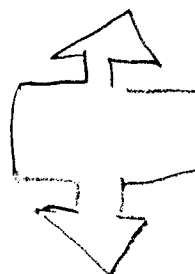
(EX)



NONE



ONE



TWO



> 2

See
Pg 466

Lines of Symmetry

Point of
Symmetry

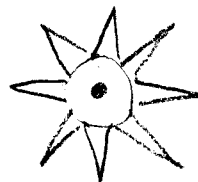
if all line segments joining preimage to image meet at point.



NONE



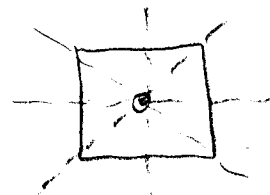
ONE



ONE

EX7
Pg 466

How many lines of symmetry for square.
Has point symmetry?



• = Point of Sym

4 Lines

Homework: Pg 467 #5-7, 12-17, 24, 25