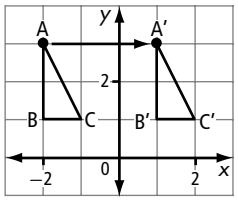
Name: _____ Date: _____

Get Ready

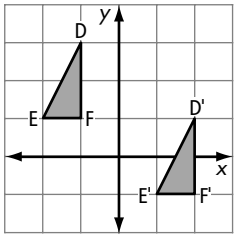
Using Translations

Transformations include translations, reflections, and rotations.
A *translation* is a slide along a straight line.
It can be horizontal (↔), vertical (↕), or oblique (slanted ↘ or ↗).

A transformation moves a shape to a different position.



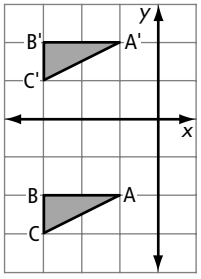
This is a translation 3 units horizontally to the right, R3.



This is a translation 3 units horizontally to the right and 2 units vertically down, R3 and D2.

1. Describe each translation.

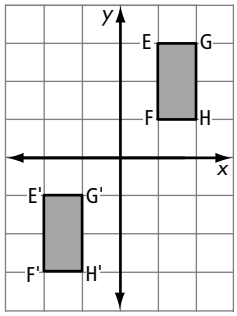
a)



_____ units

_____ up

b)



_____

_____

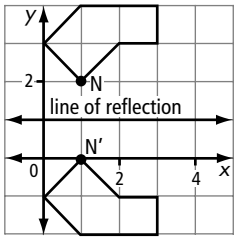
_____

_____

Drawing Reflections

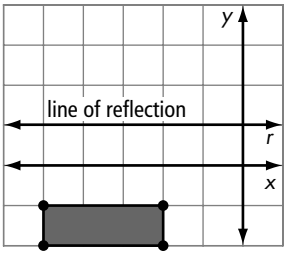
A *reflection* is a mirror image in a line of reflection.
A point and its reflection are the *same* perpendicular (⊥) distance from the *line of reflection.*

The *line of reflection* is a horizontal line at $y = 1$.
Both N and N′ are 1 unit from the line of reflection.

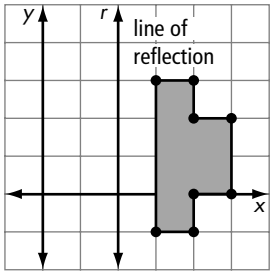


2. Draw the reflection image for each figure.

a)



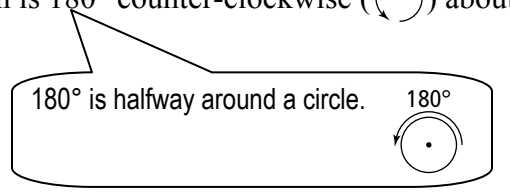
b)

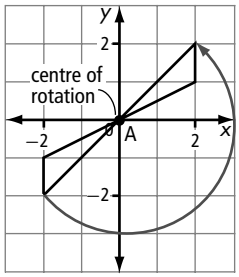


Name: _____ Date: _____

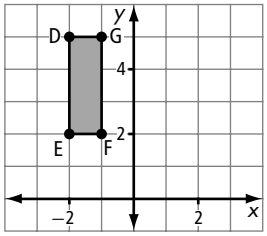
Drawing Rotations

A *rotation* is a turn about a point or centre of rotation.
It can be clockwise (↻) or counter-clockwise (↺).
The centre of rotation is at A.
The rotation is 180° counter-clockwise (↺) about A.





3. **a)** Rotate figure DEFG 90° clockwise about its centre of rotation, F. Draw the rotation image. Label it D′E′F′G′.



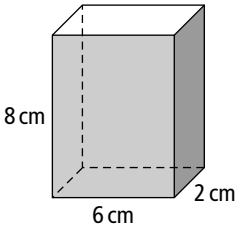
b) Write the coordinates of D′, E′, F′, and G′.

D′ = (2, _____) E′ = _____

F′ = _____ G′ = _____

Using Surface Area

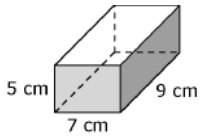
Surface area is the sum of the areas of all the faces of a 3-D object.
Find the surface area of the right rectangular prism.



Front or back	*Top or bottom*	*Ends*
$A = l \times w$	$A = l \times w$	$A = l \times w$
$= 6 \times 8$	$= 6 \times 2$	$= 2 \times 8$
$= 48\ cm^2$	$= 12\ cm^2$	$= 16\ cm^2$
Area of front and back:	Area of top and bottom:	Area of 2 ends:
$A = 2 \times 48$	$A = 2 \times 12$	$A = 2 \times 16$
$= 96\ cm^2$	$= 24\ cm^2$	$= 32\ cm^2$

Total surface area = 96 + 24 + 32
= 152 cm^2

4. Calculate the surface area of the right rectangular prism.



Front or back *Top or bottom* *Ends*