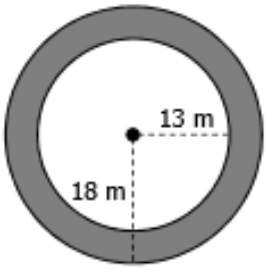
Calculate area of shaded region.

Warm up back p. 10



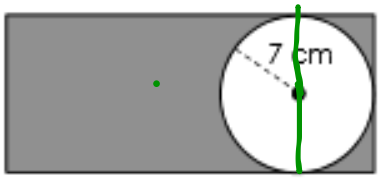
$3.14(18)^2$

1017.4

$3.14(13)^2$

530.7

$486.7 m^2$



434

$3.14(7)^2$

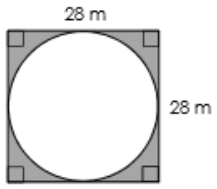
153.9

$280.1 cm^2$

EXAMPLES

Find the area of the shaded region. Assume all lines that appear to be parallel are parallel. Round to the nearest tenth if necessary.

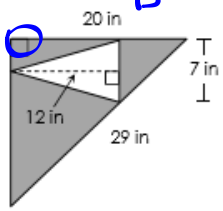
1.



out 784
in 615.8

168.2

2.



b

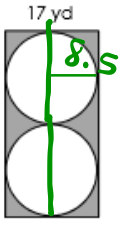
$\frac{1}{2}(20)(21)$ h

$\frac{1}{2}(7)(12)$

210
42

168

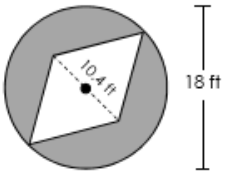
3.



578
454

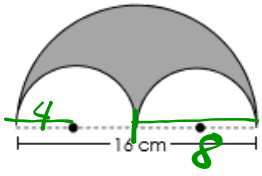
124

4.



254.5
93.6
160.9

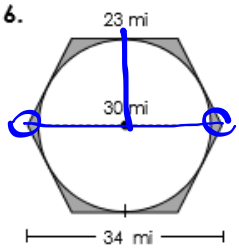
5.



100.5
50.3
50.2

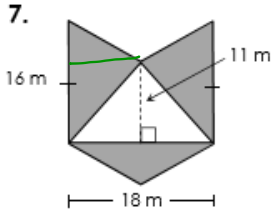
$\frac{1}{2}(23+34)(15)$

6.



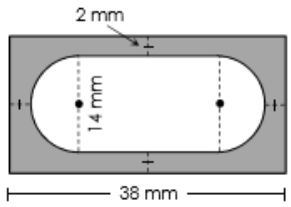
855
706.9
148.1

7.



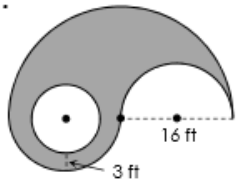
288
99
189

8.

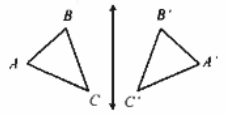


684
433.9
250.1

9.

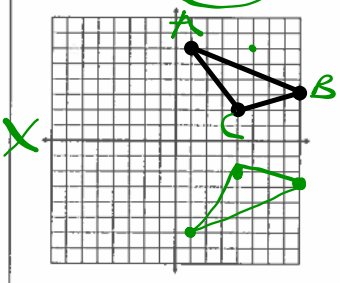


502.7
179
323.7

Main Ideas/Questions	Notes/Examples
Transformation	• A transformation is an operation that **maps an original figure** called the pre image onto a **new figure** called the image. • A transformation can change the size, position, or orientation of a figure. • There are **four types of transformations**: reflection, translation, rotation, and dilation.
Reflections 	• A flip over a line called the line of reflection. • Each point and its image are the same distance from the line of reflection. • The x-axis and y-axis are common lines of reflection. • Reflections result in congruent polygons.

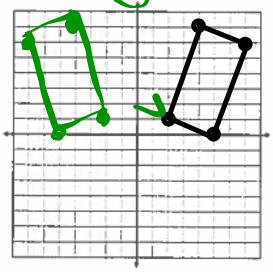
Practice! Graph and label each figure and its image under the given reflection. Give the new coordinates.

1. Triangle ABC with vertices $A(1, 6)$, $B(8, 3)$, and $C(4, 2)$ in the **x-axis**.



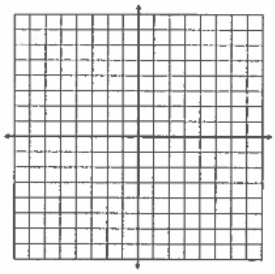
$A'(1, -6)$
$B'(8, -3)$
$C'(4, -2)$

2. Rectangle $JKLM$ with vertices $J(2, 1)$, $K(4, 7)$, $L(7, 6)$, and $M(5, 0)$ in the **y-axis**.



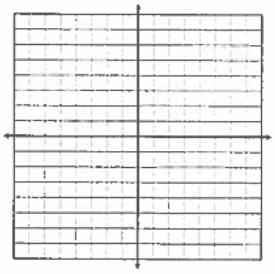
$J'(-2, 1)$
$K'(-4, 7)$
$L'(-7, 6)$
$M'(-5, 0)$

3. Triangle PQR with vertices $P(-8, -6)$, $Q(-5, -2)$, and $R(2, -1)$ in the **x-axis**.



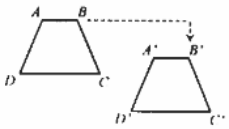
$P'(\_\_\_, \_\_\_)$
$Q'(\_\_\_, \_\_\_)$
$R'(\_\_\_, \_\_\_)$

4. Trapezoid $WXYZ$ with vertices $W(2, -3)$, $X(4, -1)$, $Y(8, -2)$, and $Z(3, -7)$ in the **y-axis**.



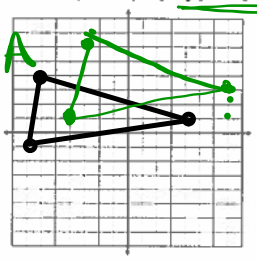
$W'(\_\_\_, \_\_\_)$
$X'(\_\_\_, \_\_\_)$
$Y'(\_\_\_, \_\_\_)$
$Z'(\_\_\_, \_\_\_)$

Topic: Class:

Main Ideas/Questions	Notes/Examples
TRANSLATION 	• A **translation** is a vertical and/or horizontal slide. • **Symbolic Form:** (x, y) - (x + h, y + k) h represents the horizontal shift k represents the vertical shift • Translations result in congruent polygons.

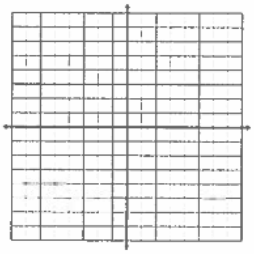
Practice! Graph and label each figure and its image under the given translation. Give the new coordinates.

1. Triangle ABC with vertices $A(-6, 4)$, $B(4, 1)$, and $C(-7, -1)$: $(x, y) \rightarrow (x + 3, y + 2)$



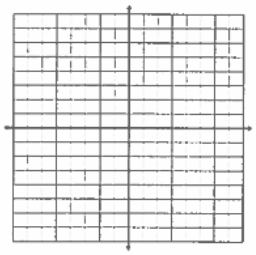
$A'(-3, 6)$
$B'(7, 3)$
$C'(-4, 1)$

2. Trapezoid $KLMN$ with vertices $K(1, 3)$, $L(2, 7)$, $M(7, 2)$, and $N(3, 1)$: $(x, y) \rightarrow (x - 8, y - 7)$



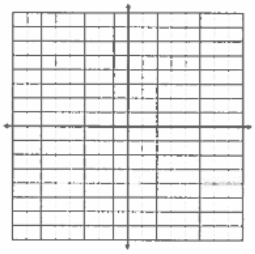
$K'(\_\_\_, \_\_\_)$
$L'(\_\_\_, \_\_\_)$
$M'(\_\_\_, \_\_\_)$
$N'(\_\_\_, \_\_\_)$

3. Square $RSTU$ with vertices $R(1, -1)$, $S(6, -3)$, $T(4, -8)$, and $U(-1, -6)$: $(x, y) \rightarrow (x - 7, y + 3)$



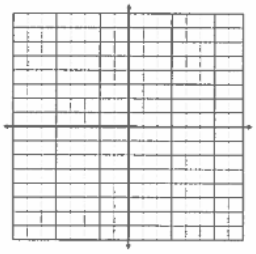
$R'(\_\_\_, \_\_\_)$
$S'(\_\_\_, \_\_\_)$
$T'(\_\_\_, \_\_\_)$
$U'(\_\_\_, \_\_\_)$

4. Rhombus $CDEF$ with vertices $C(-6, 6)$, $D(-2, 7)$, $E(-3, 3)$, and $F(-7, 2)$: $(x, y) \rightarrow (x + 9, y - 4)$



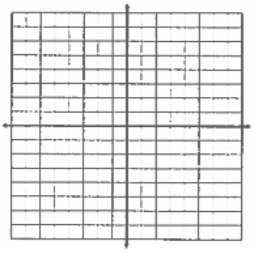
$C'(\_\_\_, \_\_\_)$
$D'(\_\_\_, \_\_\_)$
$E'(\_\_\_, \_\_\_)$
$F'(\_\_\_, \_\_\_)$

5. Rectangle $WXYZ$ with vertices $W(-2, 2)$, $X(1, 5)$, $Y(7, -1)$, and $Z(4, -4)$: $(x, y) \rightarrow (x - 1, y - 4)$



$W'(\_\_\_, \_\_\_)$
$X'(\_\_\_, \_\_\_)$
$Y'(\_\_\_, \_\_\_)$
$Z'(\_\_\_, \_\_\_)$

6. Triangle GHI with vertices $G(-7, 5)$, $H(-4, -2)$, and $I(-8, -1)$: $(x, y) \rightarrow (x + 6, y)$



$G'(\_\_\_, \_\_\_)$
$H'(\_\_\_, \_\_\_)$
$I'(\_\_\_, \_\_\_)$