Unit 2 Transformations and Congruence
Lesson 4 Composition of Transformations

Name Key

Directions: Use graph paper to perform the following transformations. Fill in the chart with the coordinates of the image. Attach your graph paper to the worksheet!

1. Pre-image: A(0,0), B(8,1), C(5,5)

Rotate the figure 180° $(-x,-y)$	(0,0) (-8,-1) (-5,-5)
Reflect the figure over the x-axis $(-x,y)$	(0,0) (-8,1) (-5,5)
Translate the figure according to (x,y)→(x+6,y-1) $(-x+6,y-1)$	(6,-1) (-2,0) (1,4)
Write an algebraic rule to take (x,y) →(x',y')	$(-x+6,y-1)$

2. Pre-image: D(-12,6), E(-4,6), F(-6,9), G(-10,9)

Translate the figure according to (x,y)→(x+1,y-6) $(x+1,y-6)$	(-11,0) (-3,0) (-5,3) (-9,3)
Reflect the figure over the x-axis $(x+1,-(y-6))$	(-11,0) (-3,0) (-5,-3) (-9,-3)
Reflect the figure over the y-axis $(-(x+1),-(y-6))$	(11,0) (3,0) (5,-3) (9,-3)
Write an algebraic rule to take (x,y) →(x',y')	$(-x-1,-y+6)$

3. Pre-image: H(2,2), I(-2,2), J(-2,-2), K(2,-2)

Rotate the figure 180° $(-x,-y)$	(-2,-2) (2,-2) (2,2) (-2,2)
Translate the figure according to (x,y)→(x+2,y+2) $(-x+2,-y+2)$	(0,0) (4,0) (4,4) (0,4)
Reflect the figure over the line $y = x$ $(-y+2,-x+2)$	(0,0) (0,4) (4,4) (4,0)
Write an algebraic rule to take (x,y) →(x',y')	$(-y+2,-x+2)$

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