Unit 1 Day 2

Reflections

Warm Up - in Notes Handout

Remember: Pick up stuff by the window!

Using the points A(3, -4), B(1, 3), C(-2, 1), D(-3, -5), perform each rule and give the resulting image points and the requested information.

1) translate right 2, down 5

Algebraic Rule: _____

2) translate left 6, up 4

Algebraic Rule: _____

3) translate using the rule
(x, y) -> (x, y - 6)

Description: _____

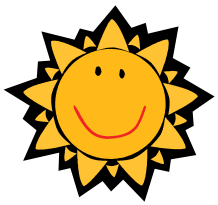
4) translate using the vector
< -1, 2 >

Description: _____

ADD THESE to your notes THEN try them. ☺

5) Given A is in the interior of ∠JKL, m∠JKA = 6x + 1, m∠JKL = 11x – 4, and m∠AKL = 15, find m∠JKA.

6) Given G is on the bisector of ∠DBC, m∠GBD = 9x + 11, and m∠CBD = 82, find m∠DBG.



Warm Up ANSWERS

Using the points A(3, -4), B(1, 3), C(-2, 1), D(-3, -5), perform each rule and give the resulting image points and the requested information.

1) translate right 2, down 5

A'(5, -9), B'(3, -2),
C'(0, -4), D'(-1, -10)

Algebraic Rule:

(x, y) -> (x+2, y-5)

2) translate left 6, up 4

A'(-3, 0), B'(-5, 7),
C'(-8, 5), D'(-9, -1)

Algebraic Rule:

(x, y) -> (x-6, y+4)

3) translate using the rule
(x, y) -> (x, y - 6)

A'(3, -10), B'(1, -3),
C'(-2, -5), D'(-3, -11)

Description:

Translated down 6 units

4) translate using the vector
< -1, 2 >

A'(2, -2), B'(0, 5),
C'(-3, 3), D'(-4, -3)

Description:

Translated left 1 and up 2

Warm Up ANSWERS

ADD THESE to your notes THEN try them. ☺

5) Given A is in the interior of ∠JKL, m∠JKA = 6x + 1, m∠JKL = 11x – 4, and m∠AKL = 15, find m∠JKA.

x = 4

m∠JKA = 25

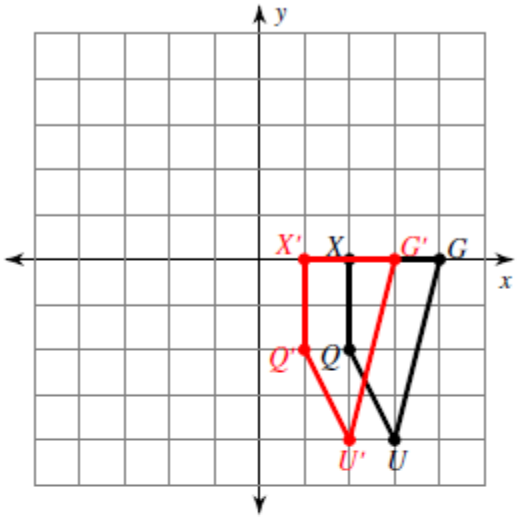
6) Given G is on the bisector of ∠DBC, m∠GBD = 9x + 11, and m∠CBD = 82, find m∠DBG.

x = 10/3

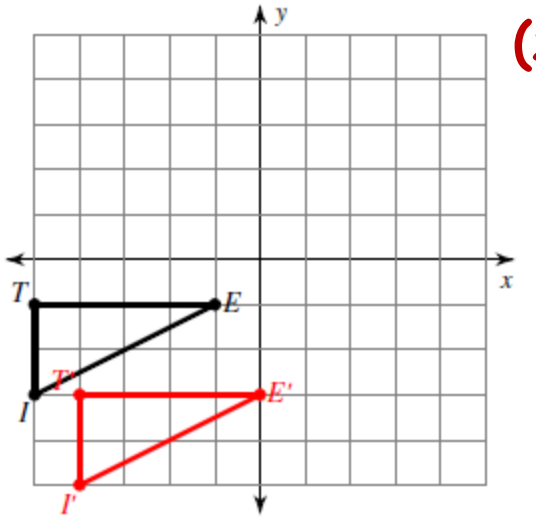
m∠DBG = 41

Day 1 Homework Answers p. 1-2 Even

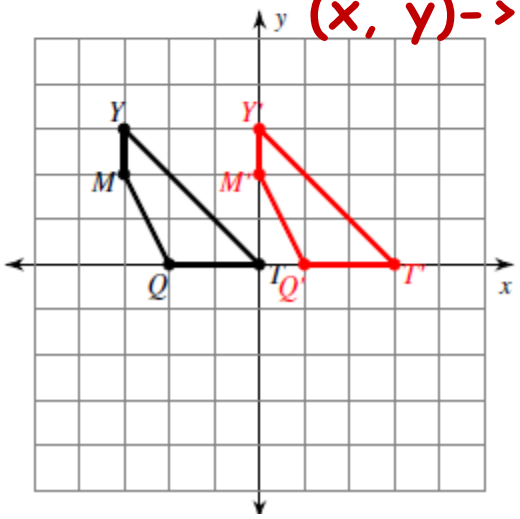
1) translation: 1 unit left (x, y)->(x-1, y)



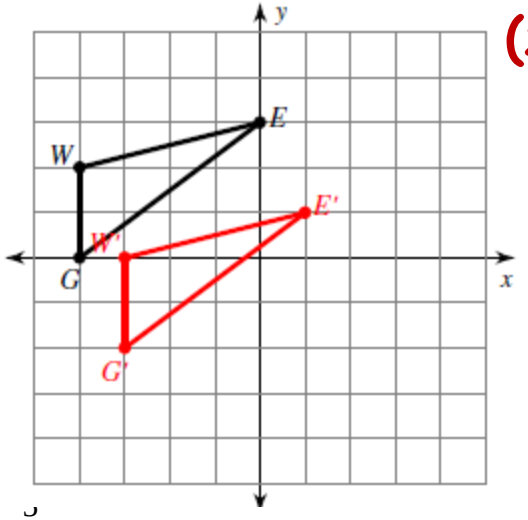
2) translation: 1 unit right and 2 units down (x, y)->(x+1,y-2)



3) translation: 3 units right (x, y)->(x+3, y)

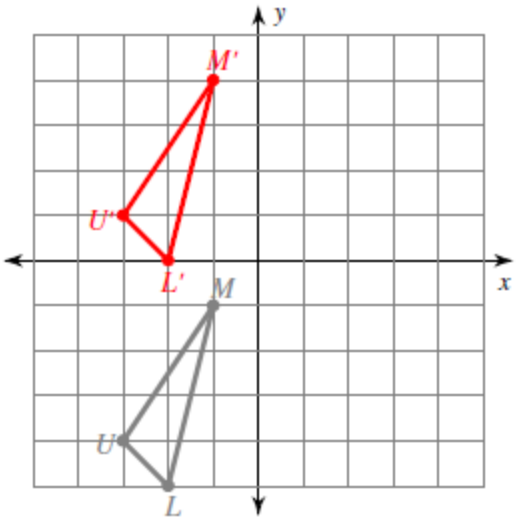


4) translation: 1 unit right and 2 units down (x, y)->(x+1,y-2)

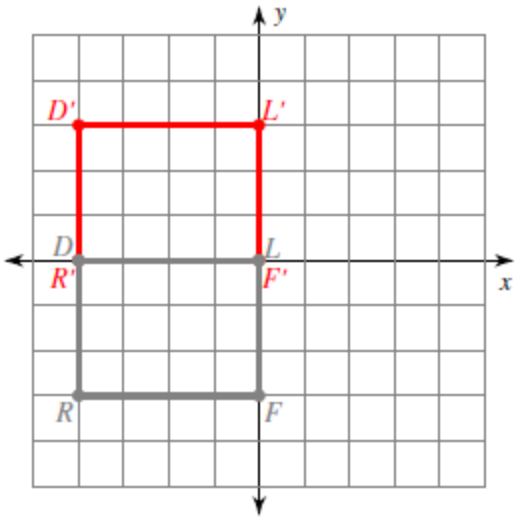


Day 1 Homework Answers p. 1-2 Even

5) translation: 5 units up (x, y)->(x,y+5)
$U(-3, -4), M(-1, -1), L(-2, -5)$



6) translation: 3 units up (x, y)->(x, y+3)
$R(-4, -3), D(-4, 0), L(0, 0), F(0, -3)$



7) translation: 2 units left and 1 unit down
$Q(0, -1), D(-2, 2), V(2, 4), J(3, 0)$
$Q'(-2, -2), D'(-4, 1), V'(0, 3), J'(1, -1)$
(x, y)->(x-2, y-1)

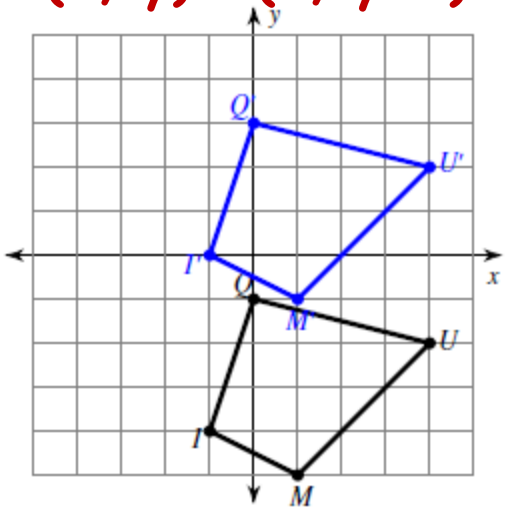
8) translation: 2 units down
$D(-4, 1), A(-2, 5), S(-1, 4), N(-1, 2)$
$D'(-4, -1), A'(-2, 3), S'(-1, 2), N'(-1, 0)$
(x, y)->(x, y-2)

9) translation: 4 units left and 4 units up
$J(-1, -2), A(-1, 0), N(3, -3)$
$J'(-5, 2), A'(-5, 4), N'(-1, 1)$
(x, y)->(x-4, y+4)

10) translation: 3 units right and 4 units up
$Z(-4, -3), I(-2, -2), V(-2, -4)$
$Z'(-1, 1), I'(1, 2), V'(1, 0)$
(x, y)->(x+3, y+4)

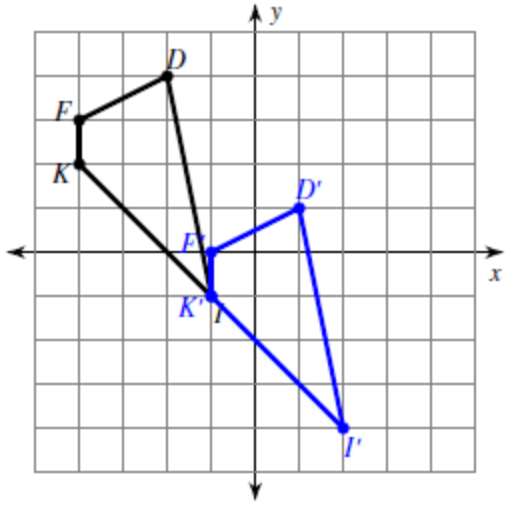
Day 1 Homework Answers p. 1-2 Even

11) (x, y)->(x, y+4)



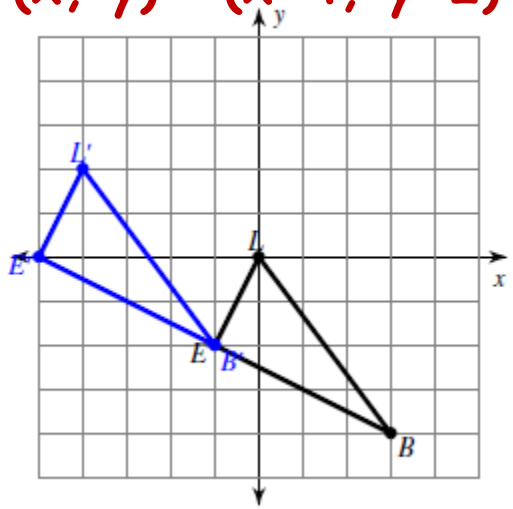
translation: 4 units up

12) (x, y)->(x+3, y-3)



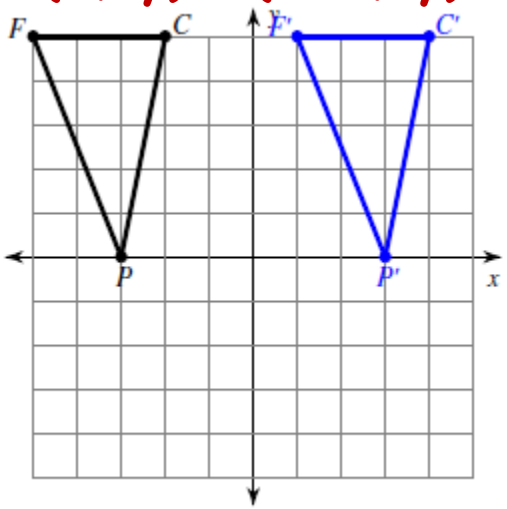
translation: 3 units right and 3 units down

13) (x, y)->(x-4, y+2)



translation: 4 units left and 2 units up

14) (x, y)->(x+6, y)



translation: 6 units right

Day 1 Homework Answers p. 3-4

1. $\overline{BA}$
2. The length of segment $\overline{AC}$
3. AB + BC = AC x = 6
4. A point that divides a segment into two congruent segments x = 5 AC = 44
5. Right Acute Obtuse Straight
6. $m\angle 1 + m\angle 2 = m\angle ABC$ x = 6
7. A ray or segment that divides an angle into two congruent angles x = 11 $m\angle ABC = 86$
8. a. = b. $\cong$, $\cong$ c. = d. = e. $\cong$
9. x = 55 y = 35 z = 110
10. a = 110 b = 70 c = 110 d = 70
11. a = 64 b = 94 c = 29

Day 1 Homework Answers p. 4-5

12. $x = 4$ TU = 8 UB = 13

13. $x = 2$ TU = 7 UB = 3 TB = 10

14. $x = 8$ RS = 41 MN = 41

15. $x = 6$ RS = 16 MN = 16

16. $x = 25$ AB = 42 BC = 42 AC = 84

17. $x = 43$ AB = 49 BC = 49 AC = 98

18. $m\angle 2 = 119°$
19. $m\angle REA = 53°$
20. $m\angle LOV = 56°$

ALWAYS DRAW on the PICTURE ☺

Reminders for tonight…

1) Homework Listed on Outline:
Packet p. 6-7 and p. 11-12 #1, 4, 7, 10, 22
NOTICE: pages 11-12 are some Algebra review

2) Get onto Course Website and
Print HW Packet Day 5-7 by Tuesday 9/6
honorsmath2greenhope.weebly.com

3) Get syllabus & honor code
forms signed and completed

4) Get supplies for class
- especially calculator & compass

Complete Reflections Activities

Notes p. 4 – 6

Check in with Teacher or a Neighbor after each Checkpoint

Check your Answers! Notes p. 5

- A reflection is a transformation in which the image is a mirror image of the preimage.
- A point on the line of reflection maps to **itself** .
- Other points map to the **opposite** side of the reflection line so that the reflection line is the **perpendicular bisector** of the segment joining the preimage and the image.
- Preimage and image points are equidistant from the **reflection** line (or mirror line).
- Notation for reflections is $R_{\text{line of reflection}}$.
  Example: $R_{\text{x-axis}}$ means reflection across the x-axis.

Check your Answers! Notes p. 6

Algebraic Rules for Reflections:

Proper Notation

1. Reflection in the x-axis

   maps $(x, y) \rightarrow$ **$(x, -y)$** $R_{x\text{-axis}}$

2. Reflection in the y-axis

   maps $(x, y) \rightarrow$ **$(-x, y)$** $R_{y\text{-axis}}$

3. Reflection in the line y = x

   maps $(x, y) \rightarrow$ **(y, x)** $R_{y = x}$

4. Reflection in the line y = -x

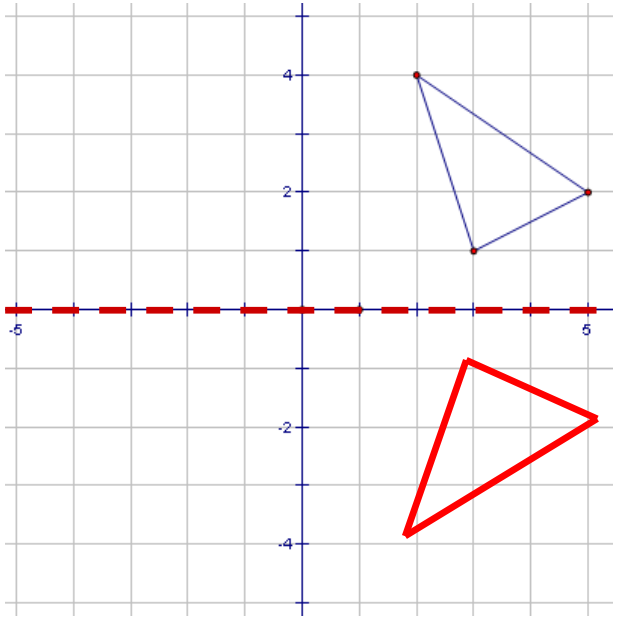
   maps $(x, y) \rightarrow$ **$(-y, -x)$** $R_{y = -x}$

Practice

Reflections Notes p. 7

Notes p. 7

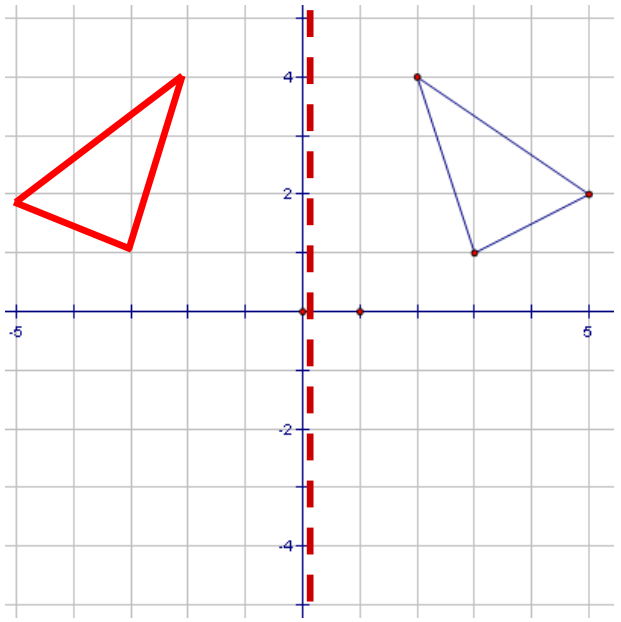
The points (2,4), (3,1), (5,2) are reflected with the rule $(x, y) \rightarrow (x, -y)$



Description:

Reflection over x-axis

The points (2,4), (3,1), (5,2) are reflected with the rule $(x, y) \rightarrow (-x, y)$

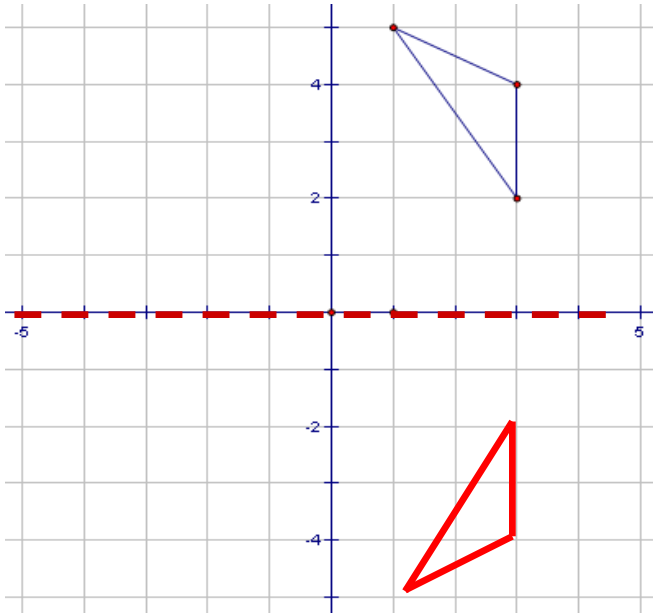


Description:

Reflection in the y-axis

Notes p. 7

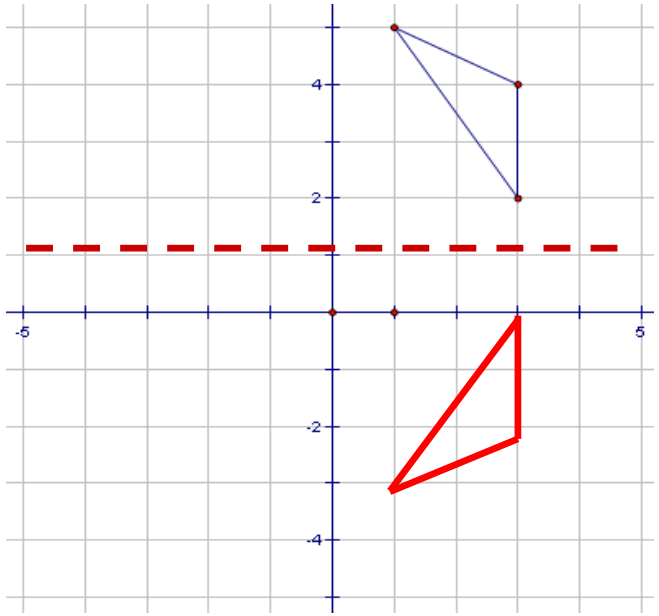
The points (3,2), (1,5), (3,4) are reflected across the x - axis.



Algebraic Rule:

$$(x, y) \rightarrow (x, -y)$$

The points (3,2), (1,5), (3,4) are reflected across y = 1.



Notation:

$$R_{y=1}$$

Summarize with Algebraic Rules:

(x, y) → (x, -y) Reflection over x-axis	**(x, y) → (-x, y)** Reflection over y-axis
(x, y) → (-x, -y) Reflection over both axes	
(x, y) → (y, x) Reflection in y = x	**(x, y) → (-y, -x)** Reflection across y = - x
Can you figure out this one on your own? Describe the reflection the results from the following algebraic rule (x, y) → (x, y) Reflection over x-axis then back over x-axis OR Reflection over y-axis then back over y-axis	

Tonight, remember to do…

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