

April 8-14, 2020

# DONELSON MIDDLE SCHOOL 8<sup>TH</sup> GRADE CONNECTION

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Hello 8<sup>th</sup> grade students and families! We miss you and hope you are staying safe and healthy during this time.

The activities listed here are optional, but are meant to support your child to maintain his/her skills until we return. Work will not be graded, and will not affect student promotion or attendance.

### Suggested Grade Level Activities:

Check out the **MNPS printable learning packet** for this week here: <https://www.mnps.org/printables>

### 8<sup>th</sup> Grade Digital Toolbox – <https://bit.ly/DMS8thgrade>

Visit this site for resources, activities, and ideas from your teachers. Each teacher has a tab with resources available for their classes. Feel free to browse your teachers' tabs and check back regularly for updates.

### English Language Arts:

Read 30 minutes per day! Additionally - iReady is a great resource for students to work on their reading fluency and comprehension.

### Math:

This week's focus is on reviewing transformations. Transformations include translations, rotations, reflections, and dilations. Check out the Digital Toolbox for resources.

### 8<sup>th</sup> Grade Science:

Let's learn about space technologies! First, read about the space technologies listed in this article: [bit.ly/SpaceTechn](http://bit.ly/SpaceTechn) and then check out this video on how we study the stars: [bit.ly/SpaceTechVideo](http://bit.ly/SpaceTechVideo) .

### Physical Science:

This week's focus is on the physical properties of metals. Watch this video ([bit.ly/ppmetals](http://bit.ly/ppmetals)) and then work on answering these practice questions: [bit.ly/metalsreading](http://bit.ly/metalsreading) .



### Social Studies:

Refine your knowledge of American History on [ushistory.org](http://ushistory.org) (Chapters 19-34) or [mrbarton.org](http://mrbarton.org). This week, focus on topic 20 on "Jeffersonian America: A Second Revolution?" ([bit.ly/JeffersonianAm](http://bit.ly/JeffersonianAm)). After reading each chapter or number, develop a list of 5 things you learned and 2 questions that you have.

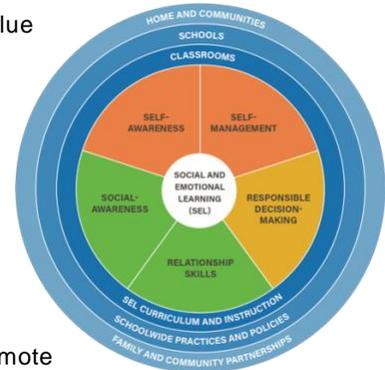
**Related Arts:**

<b>Band</b>	Did you know Nashville has their very own Symphony Orchestra? We are Music City! All sorts of music fills the streets of Nashville. Take time this week to explore the link ( <a href="http://bit.ly/NashvilleSO">bit.ly/NashvilleSO</a> ) for the NSO. If you'd like to email and ask questions...please do. <a href="mailto:Laura.shepherd@mnps.org">Laura.shepherd@mnps.org</a> .	<b>Music</b>	Take advantage of all the musical offerings that musicians are providing, free of charge. Facebook, Instagram, Twitter are all full of concert announcements! Take the time you have now to venture out and see if you can find a new favorite artist!
<b>Art</b>	Check out this link ( <a href="http://bit.ly/DMSDraw">bit.ly/DMSDraw</a> ) to help you decide what to draw each day. Drawing can help sharpen your artistic skills and promote creative skills to be used in all aspects of your life!	<b>P.E.</b>	Try out an online workout: <a href="http://bit.ly/PE_Yoga">bit.ly/PE_Yoga</a> Additionally, daily 30-45 minute walks can help alleviate stress and anxiety.
<b>Guitar</b>	Find virtual daily guitar lessons here: <a href="http://bit.ly/DMSGuitar">bit.ly/DMSGuitar</a>	<b>Spanish</b>	Learn a new language on the Duolingo App ( <a href="http://duolingo.com">duolingo.com</a> )

**Social Emotional Learning/Self-Care:**

Donelson Middle School wants to centralize Social Emotional Learning for a healthy environment at home, school, and community for families and students. When we are intentional about being in community, especially during this time of uncertainty, we will all have a unifying sense of peace. We all will play an active and important part of the larger Donelson community. We want to provide you some tips for building and strengthening collective efficacy as you may face personal and intrapersonal conflict. Remember to use restorative practices as your foundation. The underlying principles of a restorative community include:

- There is a deep underlying belief that all community members add value and enrich the community
- There is systematic effort to hear and respect all voices
- There is authentic listening and sharing in the community
- Members speak and listen from the heart.
- There is a conscious and spoken value placed on positive relationships.
- Decisions are made inclusively.
- There is an expectation that decisions and actions will be made "with each other, not "for" or "to" by one segment of the community to another.
- There is a non-punitive response to wrongdoing with the intent to promote healing and learning to avoid future harm.



Social and emotional learning (SEL) is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions.

**SEL Resource of the Week:** Exploring Feelings & Emotional Intelligence (<https://bit.ly/2ExploreFeelings>)

Stay connected with us:



[www.mnps.org/covid19](http://www.mnps.org/covid19)



[donelsonmiddle.weebly.com](http://donelsonmiddle.weebly.com)



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# Elements and Their Properties

## section 1 Metals

### What You'll Learn

- the properties of metals
- how to identify alkali metals and alkaline earth metals
- the difference among transition elements

### Mark the Text

**Underline** As you read each paragraph, underline the main idea. Also underline other important information, such as definitions.

### Picture This

1. **Circle** the atom that gave away one or more electrons.

### Before You Read

Think about what you are wearing. On the lines below, list all of the metal objects that are on your body.

### Read to Learn

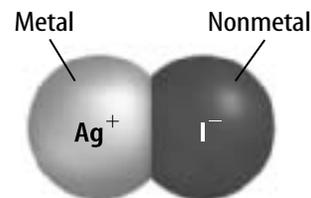
#### Properties of Metals

People have used metals for thousands of years. The first metal used was gold, about 6,000 years ago. People started using copper and silver a few thousand years later. Then came tin and iron. Aluminum wasn't refined—separated from other material—until the 1800s.

On the periodic table, metals are elements found to the left of the stair-step line. Metals usually have many common properties. **Metals** are good conductors of heat and electricity, and all but mercury are solid at room temperature. Metals reflect light. This property is called luster. Metals are **malleable** (MAL ee uh bul), which means they can be hammered or rolled into sheets. Metals are also ductile. **Ductile** (DUK tul) means they can be stretched into wires. The properties of metals make them good materials for making many objects, ranging from eyeglass frames to computers to building materials.

#### How do metals form ionic bonds?

When a metal atom gives one or more electrons in its outer energy level to a nonmetal atom in a chemical reaction, the atoms bond. This electron loss and gain results in both atoms becoming ions. The ions form ionic bonds, such as shown in the figure. Both atoms become more chemically stable because each ion has a full outer energy level.



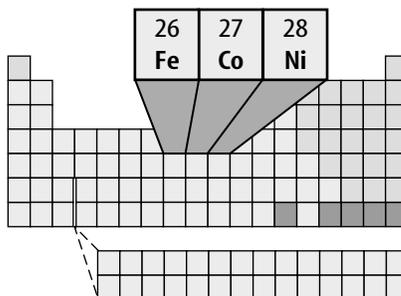




Transition elements are often found in nature in their pure, or elemental, form. The elements we think of as being typical metals are transition elements. Iron, copper, and gold are some examples. Transition elements often form colored compounds. Cadmium yellow and cobalt blue paints are made from compounds of transition elements.

### What are the uses of iron, cobalt, and nickel?

Iron, cobalt, and nickel are the first elements in Groups 8, 9, and 10 on the periodic table. They are sometimes called the iron triad. These elements are used in the process to create steel and other metal mixtures. Iron is the main ingredient in steel



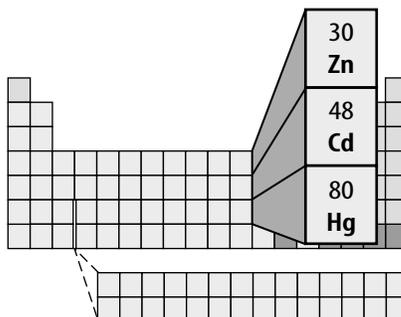
and is the most often used metal. Iron is the second most common metallic element found in Earth's crust, after aluminum. Some steels contain nickel and cobalt. Nickel is added to some metals to give them strength or a shiny protective coating.

### How are copper, silver, and gold used?

The three elements in Group 11 on the periodic table are copper, silver, and gold. These elements are stable, malleable, and found as free elements in nature. They are known as the coinage metals because they were once used to make coins. Gold and silver are too expensive to be used in most coins today, but copper is still used. Copper also is used for electrical wiring. It is inexpensive and conducts electricity very well. Silver compounds are used to make photographic film. Silver and gold have an attractive color, do not corrode or wear away, and are rare, so they often are used to make jewelry.

### What are uses for zinc, cadmium, and mercury?

Zinc, cadmium, and mercury are the elements in Group 12 on the periodic table. Zinc and cadmium are often used to coat other metals. Cadmium also is used in rechargeable batteries. Since mercury is a liquid at room temperature, it is used in thermometers, thermostats, switches, and batteries. Mercury is poisonous and can accumulate in the body.



### Picture This

**6. Explain** Use the periodic table to explain why iron, cobalt, and nickel are not in the same group of elements.

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### Think it Over

**7. Apply** Pennies used to be called "coppers." How do you suppose they got this nickname?

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### Picture This

**8. Infer** On the periodic table to the left, highlight the group that contains the coinage metals. What are the atomic numbers of copper, silver, and gold?

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## ● After You Read

### Mini Glossary

**ductile:** the ability to be stretched into a wire

**malleable:** the ability to be hammered or rolled into a sheet

**metal:** an element that is a good conductor of heat and electricity and is usually a solid at room temperature

**metallic bonding:** occurs because a cloud of electrons moves freely among positively charged metallic ions

⋮ **radioactive element:** an element in which the nucleus of the atom breaks down and gives off particles and energy

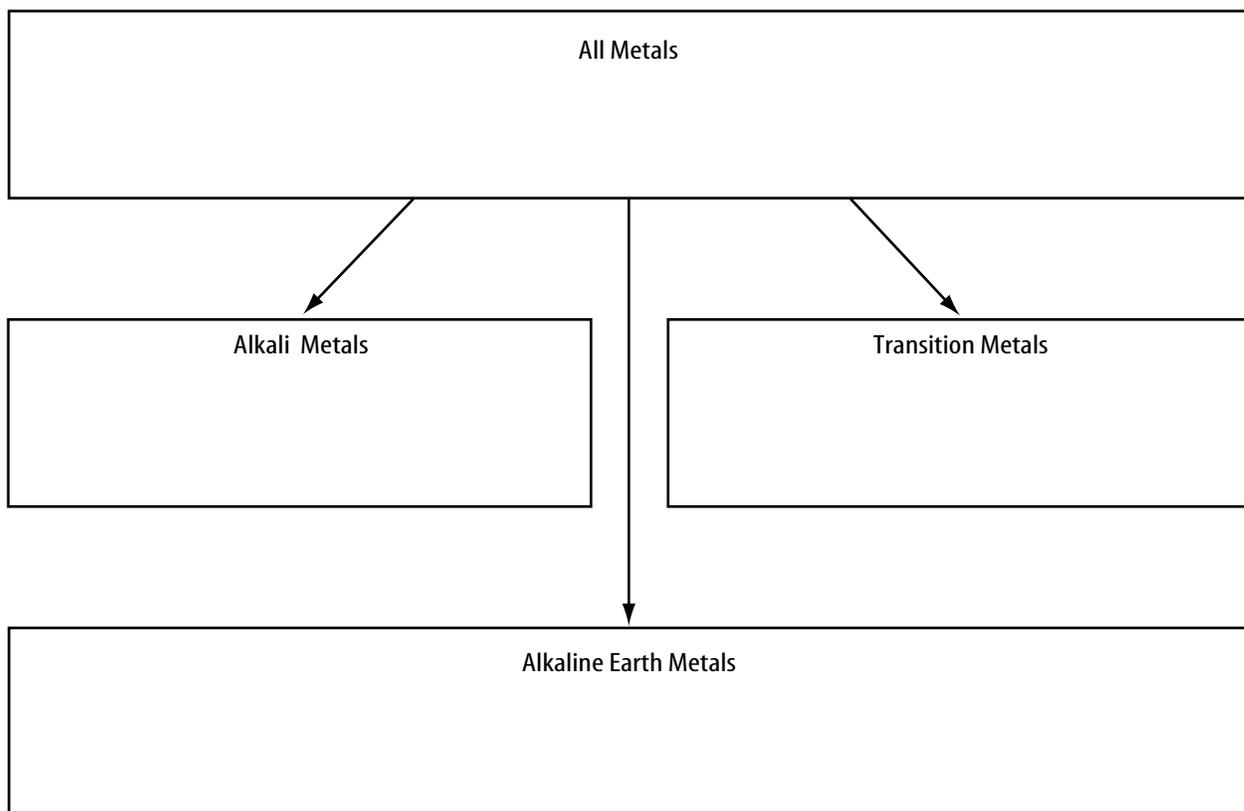
⋮ **transition element:** one of the elements in Groups 3 through 12 on the periodic table

1. Review the terms and their definitions in the Mini Glossary. Write a sentence that shows your understanding of one of the properties of metals.

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2. In the graphic organizer below, list characteristics that are common to all metals. Then list characteristics of the three types of metals. Give examples of each type of metal.



Name: \_\_\_\_\_

Date: \_\_\_\_\_

M8-U3: Notes #1 – Transformational Geometry -Translations Class: \_\_\_\_\_

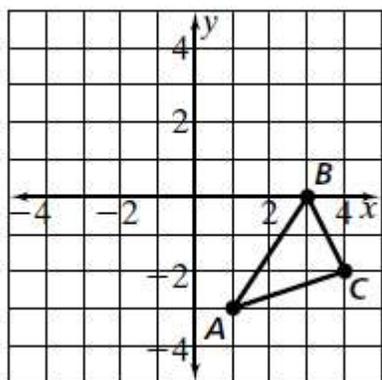
A **transformation** is a change in the \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ of a figure.

A **translation** is a transformation which \_\_\_\_\_ each point of a figure the same \_\_\_\_\_ and in the same \_\_\_\_\_.

The resulting figure after a transformation is called the \_\_\_\_\_ of the original figure.

**EXAMPLE 1:**

$\triangle ABC$  is translated 1 unit right and 4 units up. Draw the image  $\triangle A'B'C'$ .



What are the coordinates of:

A (1, -3) → A' \_\_\_\_\_

B (3, 0) → B' \_\_\_\_\_

C (4, -2) → C' \_\_\_\_\_

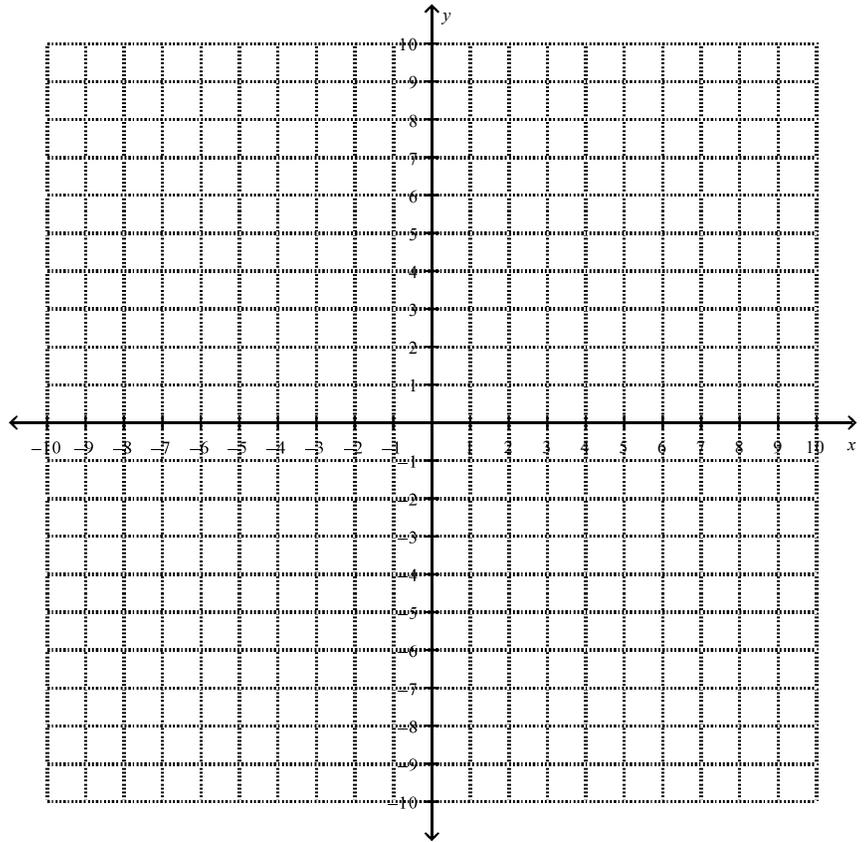
From EXAMPLE 1,  $\triangle ABC \rightarrow \triangle A'B'C'$

As a general rule this translation could be written as  $(x, y) \rightarrow (x + \underline{\hspace{1cm}}, y + \underline{\hspace{1cm}})$ .

**EXAMPLE 2:**

$\triangle JKL$  has coordinates  $J(0,2)$ ,  $K(3,4)$ , and  $L(5,1)$ .

- a) Draw  $\triangle JKL$ .
- b) Draw the image  $\triangle J'K'L'$  after a translation of 4 units to the left and 5 units up. Label the triangle.



What are the coordinates of:

- $J$      (0, 2)      $\rightarrow$   $J'$  \_\_\_\_\_
- $K$      (3, 4)      $\rightarrow$   $K'$  \_\_\_\_\_
- $L$      (5, 1)      $\rightarrow$   $L'$  \_\_\_\_\_

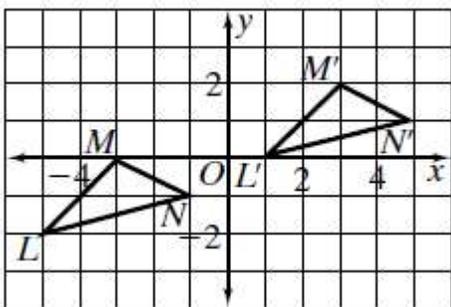
Rule:  $(x, y) \rightarrow ( \quad , \quad )$

Tell me more about this figure, is it congruent or similar? Explain how you know.

Translation Location		
	Add	Subtract
$x$ coordinate		
$y$ coordinate		

**EXAMPLE 3:**

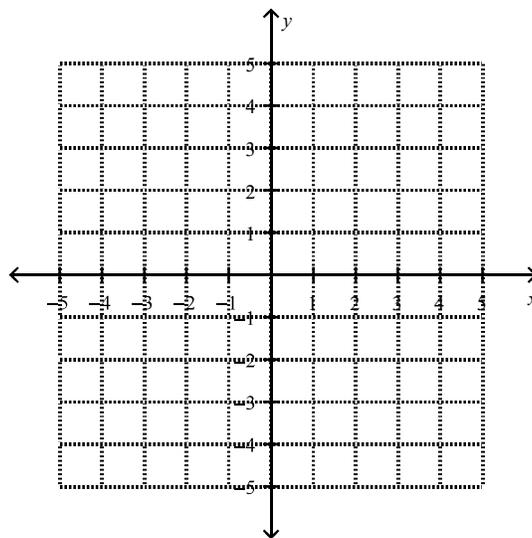
Write a general rule which describes the translation shown below.  $\triangle LMN$  is the original triangle.



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

**EXAMPLE 4:**

- a) Graph points  $T(0,3)$ ,  $U(2, 4)$  and  $V(5, -1)$  and connect the points to make a triangle.
- b) Translate  $\triangle TUV$  using the rule  $(x, y) \rightarrow (x - 3, y - 1)$ .
- c) In words, describe what the rule is asking you to do.



- d) Draw the image  $\triangle T'U'V'$ .
- e) Identify the coordinates of  $\triangle T'U'V'$ .

$T'$  \_\_\_\_\_  
 $U'$  \_\_\_\_\_  
 $V'$  \_\_\_\_\_

- f) Using the image of  $\triangle T'U'V'$  perform an additional translation using the rule  $(x, y) \rightarrow (x + 3, y - 3)$ . State the new coordinates of  $\triangle T''U''V''$ . Is this new image congruent or similar to the original figure?

**Practice:**

1) a) Use arrow notation to write a rule for the given translation.

\_\_\_\_\_

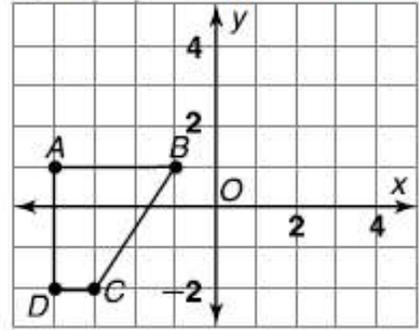
b) Graph and label the image after the translation.

c) Name the coordinates of the image.

A' \_\_\_\_\_ B' \_\_\_\_\_

C' \_\_\_\_\_ D' \_\_\_\_\_

right 5 units, up 1 unit



2) a) Use arrow notation to write a rule for the given translation.

\_\_\_\_\_

b) Graph and label the image after the translation.

c) Name the coordinates of the image.

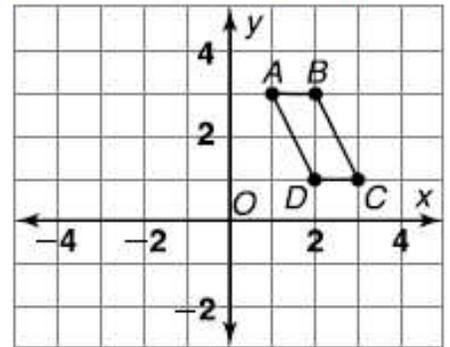
A' \_\_\_\_\_

B' \_\_\_\_\_

C' \_\_\_\_\_

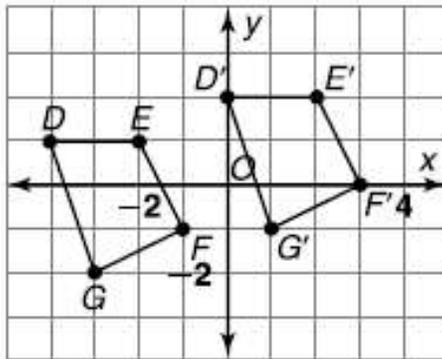
D' \_\_\_\_\_

left 3 units, down 2 units

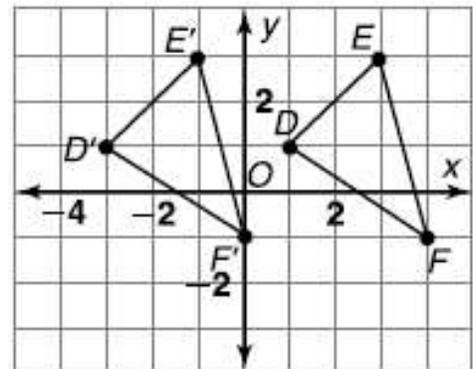


In questions 3 and 4 below, use arrow notation to write a rule that describes the translation shown on the graph.

3)



4)



**5) MULTIPLE CHOICE:**

Write a description of the rule  $(x, y) \rightarrow (x - 7, y + 4)$ .

- (a)** translation 7 units to the right and 4 units up
- (b)** translation 7 units to the left and 4 units down
- (c)** translation 7 units to the right and 4 units down
- (d)** translation 7 units to the left and 4 units up

Name: Key

Date: \_\_\_\_\_

M8-U3: Notes #1 – Transformational Geometry -Translations Class: \_\_\_\_\_

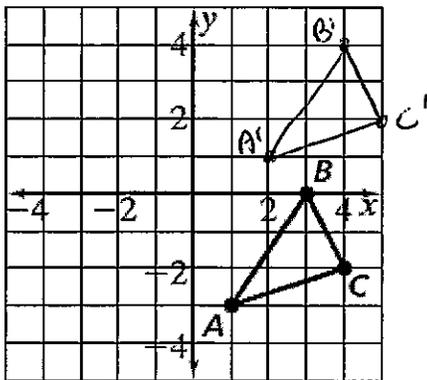
A **transformation** is a change in the size, location, or orientation of a figure.  
*-the way it appears*

A **translation** is a transformation which slides each point of a figure the same distance and in the same direction.

The resulting figure after a transformation is called the image of the original figure.

**EXAMPLE 1:**

$\triangle ABC$  is translated 1 unit right and 4 units up. Draw the image  $\triangle A'B'C'$ .



What are the coordinates of:

A (1, -3) → A' (2, 1)

B (3, 0) → B' (4, 4)

C (4, -2) → C' (5, 2)

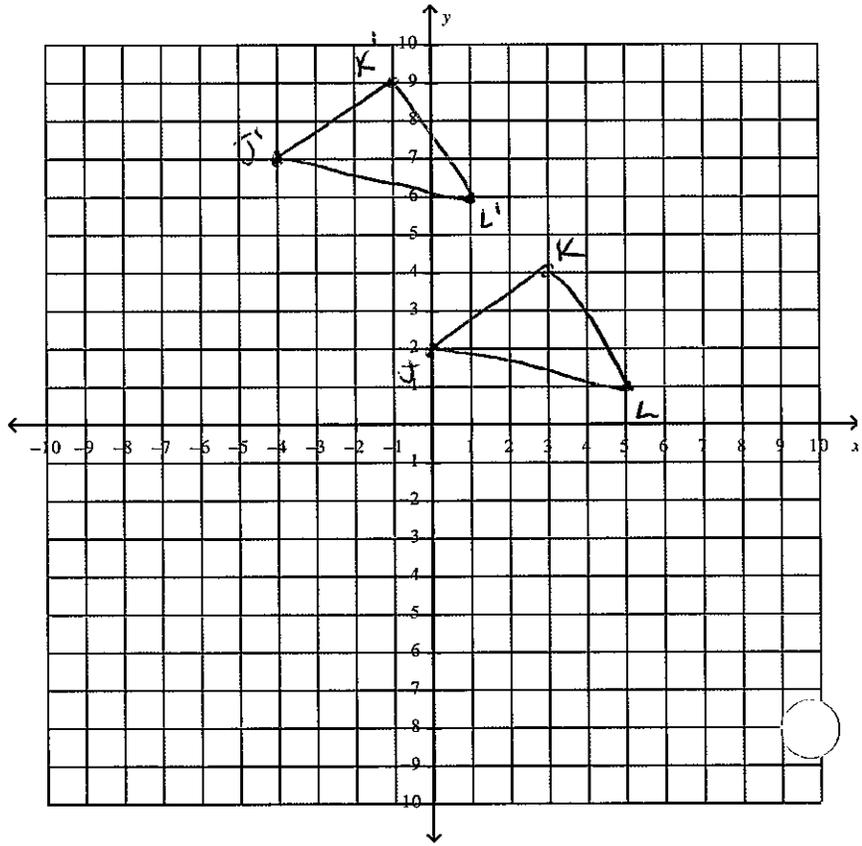
From EXAMPLE 1,  $\triangle ABC \rightarrow \triangle A'B'C'$

As a general rule this translation could be written as  $(x, y) \rightarrow (x + \underline{1}, y + \underline{4})$ .

**EXAMPLE 2:**

$\triangle JKL$  has coordinates  $J(0,2)$ ,  $K(3,4)$ , and  $L(5,1)$ .

- a) Draw  $\triangle JKL$ .
- b) Draw the image  $\triangle J'K'L'$  after a translation of 4 units to the left and 5 units up. Label the triangle.



What are the coordinates of:

$J$  (0, 2)  $\rightarrow$   $J'$  (-4, 7)  
 $K$  (3, 4)  $\rightarrow$   $K'$  (-1, 9)  
 $L$  (5, 1)  $\rightarrow$   $L'$  (1, 6)

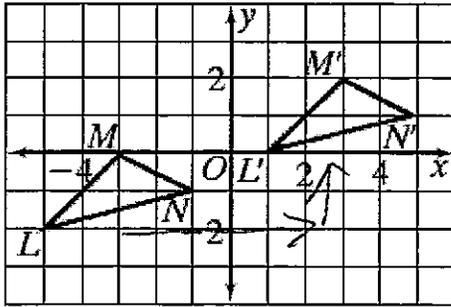
Rule:  $(x, y) \rightarrow (x-4, y+5)$

Tell me more about this figure, is it congruent or similar? Explain how you know.

Translation Location		
	Add	Subtract
x coordinate	goes to the right $\rightarrow$	goes to the left $\leftarrow$
y coordinate	goes up $\uparrow$	goes down $\downarrow$

**EXAMPLE 3:**

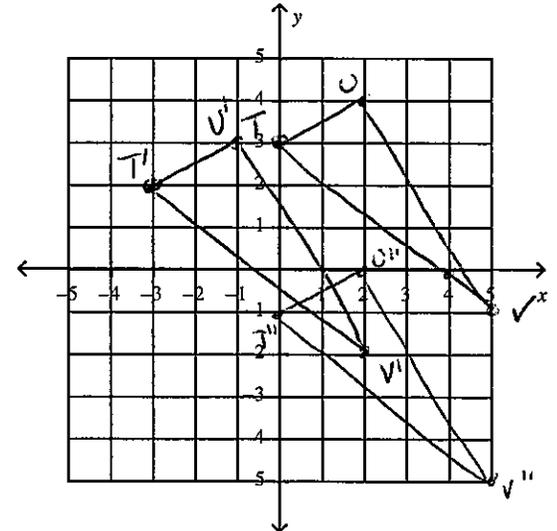
Write a general rule which describes the translation shown below.  $\triangle LMN$  is the original triangle.



$$(x, y) \rightarrow (x+6, y+2)$$

**EXAMPLE 4:**

- Graph points  $T(0,3)$ ,  $U(2, 4)$  and  $V(5, -1)$  and connect the points to make a triangle.
- Translate  $\triangle TUV$  using the rule  $(x, y) \rightarrow (x - 3, y - 1)$ .
- In words, describe what the rule is asking you to do.



- Draw the image  $\triangle T'U'V'$ .
- Identify the coordinates of  $\triangle T'U'V'$ .

$$\begin{array}{l} T' (-3, 2) \\ U' (-1, 3) \\ V' (2, -2) \end{array}$$

- Using the image of  $\triangle T'U'V'$  perform an additional translation using the rule  $(x, y) \rightarrow (x + 3, y - 3)$ . State the new coordinates of  $\triangle T''U''V''$ . Is this new image congruent or similar to the original figure?

$$\begin{array}{l} T'' (0, -1) \\ U'' (2, 0) \\ V'' (5, -5) \end{array}$$

**Practice:**

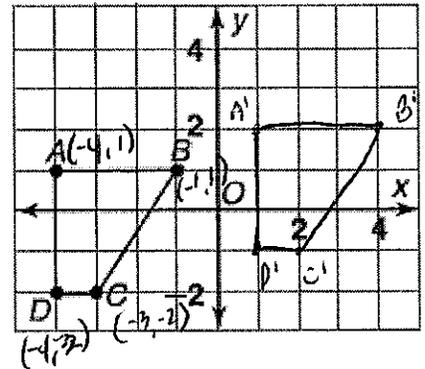
- 1) a) Use arrow notation to write a rule for the given translation.

$$(x, y) \rightarrow (x + 5, y + 1)$$

- b) Graph and label the image after the translation.  
c) Name the coordinates of the image.

A' (1, 2)    B' (4, 2)  
C' (2, -1)    D' (1, -1)

right 5 units, up 1 unit



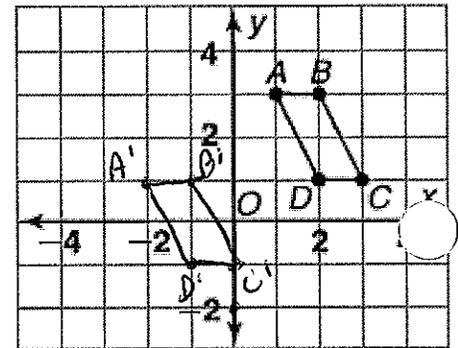
- 2) a) Use arrow notation to write a rule for the given translation.

$$(x, y) \rightarrow (x - 3, y - 2)$$

- b) Graph and label the image after the translation.  
c) Name the coordinates of the image.

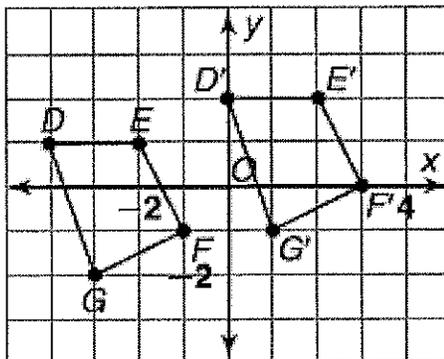
A(1, 3) → A' (-2, 1)  
B(2, 3) → B' (-1, 1)  
C(3, 1) → C' (0, -1)  
D(2, 1) → D' (-1, -1)

left 3 units, down 2 units



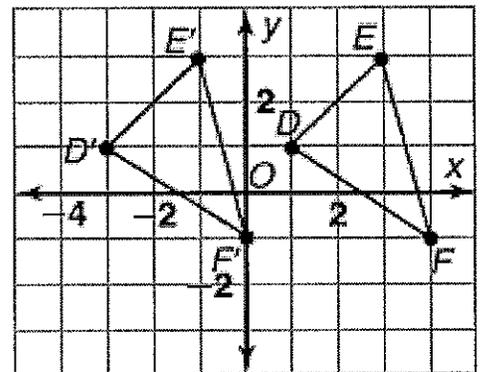
In questions 3 and 4 below, use arrow notation to write a rule that describes the translation shown on the graph.

3)



$$(x, y) \rightarrow (x + 4, y + 1)$$

4)



$$(x, y) \rightarrow (x - 4, y)$$

5) MULTIPLE CHOICE:

Write a description of the rule  $(x, y) \rightarrow (x - 7, y + 4)$ .

- (a) translation 7 units to the right and 4 units up
- (b) translation 7 units to the left and 4 units down
- (c) translation 7 units to the right and 4 units down
- (d) translation 7 units to the left and 4 units up