

Week 35: 5/2-5/6 Math I

Due: 5/9

Objectives:

1. To prove two triangles are congruent using the ASA Postulate and the AAS Theorem.
2. To review for the final exam.
- 3.
- 4.

Monday:

In Class:

Section 12-3: #1-8

In Class Handout

Homework:

Section 12-3: #9-17

Tuesday:

In Class:

Review Chapters 4, 8, and 10

Homework:

Review Handouts for Chapters 4, 8, and 10

Wednesday:

Homework:

Complete Handouts for Chapters 4, 8, and 10

Thursday:

In Class:

Review Chapters 11, 5, and 12

Homework:

Review Handouts for Chapters 11, 5, and 12

Friday:

Homework:

Study for Final Exam

Chapter 4 Quiz 1 *Evans Only*

Form G

Lessons 4-1 through 4-4

Do you know HOW?

Solve each system by graphing. Tell whether the system has *one solution*, *infinitely many solutions*, or *no solution*.

$$\begin{aligned} 1. \quad & y = 2x + 5 \\ & y - 4x = -2 \end{aligned}$$

$$\begin{aligned} 2. \quad & y - 2x = 1 \\ & y = 2x + 6 \end{aligned}$$

$$\begin{aligned} 3. \quad & y + \frac{x}{2} = 8 \\ & 2y = -x + 16 \end{aligned}$$

$$\begin{aligned} 4. \quad & 2x - 3y = 3 \\ & x + 4y = -2 \end{aligned}$$

Solve each system using substitution.

$$\begin{aligned} 5. \quad & x = y + 2 \\ & 2y = x - 1 \end{aligned}$$

$$\begin{aligned} 6. \quad & y = 3x + 5 \\ & y = x + 3 \end{aligned}$$

$$\begin{aligned} 7. \quad & 3x = y + 2 \\ & -2y = 1 - 3x \end{aligned}$$

$$\begin{aligned} 8. \quad & x = \frac{y}{2} - 1 \\ & 6x + 5y = 26 \end{aligned}$$

Solve each system using elimination.

$$\begin{aligned} 9. \quad & 3x + 4y = 31 \\ & 2x - 4y = -6 \end{aligned}$$

$$\begin{aligned} 10. \quad & 3x + 5y = 54 \\ & 6x + 4y = 72 \end{aligned}$$

$$\begin{aligned} 11. \quad & -14x + 9y = 46 \\ & 14x - 9y = 102 \end{aligned}$$

$$\begin{aligned} 12. \quad & 4x + 3y = 16 \\ & 7x - 5y = 69 \end{aligned}$$

Write a system of equations to model the situation. Solve by any method.

13. John paid \$34 for two algebra and three geometry books. He paid \$36 for three algebra and two geometry books. What is the cost of each book?
14. The sum of two numbers is 14. If one of the numbers is doubled, the sum will become 22. What are the numbers?
15. Peter invested \$450 in insurance and stocks. He put \$50 more in insurance than stocks. How much did he invest in each?
16. The measure of one of two supplementary angles is three times the measure of the other angle. What are the measures of the angles?

Do you UNDERSTAND?

17. **Reasoning** If a system of linear equations has no solution, what does that tell you about the slopes and y -intercepts of the graphs of the equations?
18. **Open-Ended** Write a system of linear equations that has no solution and a system of equations that has infinitely many solutions.

Chapter 4 Quiz 2

Evens Only

Form G

Lessons 4-5 through 4-6

Do you know HOW?

Graph each inequality in the coordinate plane.

1. $y < x + 3$

2. $y > 3x - 5$

3. $3x + y \leq -4$

4. $9 \geq 7x - 2y$

Solve each system of inequalities by graphing.

5. $-x + 7y > 16$
 $11x - y \leq 12$

6. $2x + 5y \leq 6$
 $5x - 3y \geq 9$

7. $3y < \frac{x}{3} - 1$
 $2y \leq 2x + 1$

8. $3x \geq 5y - 4$
 $-2y < 4x - 1$

Do you UNDERSTAND?

9. **Writing** How do you decide what region to shade when graphing a system of linear inequalities? Explain with an example and graph.

10. **Open-Ended** When do you use a dashed line or a solid line when graphing inequalities? What do you know about the points on the dashed or solid line?

11. **Reasoning** When can you not use $(0, 0)$ as a point to determine the region to be shaded? How would you choose a point when this happens?

Chapter 8 Quiz 1

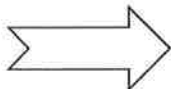
Form G

Lessons 8-1 through 8-2

Do you know HOW?

Tell whether the transformation appears to be a rigid motion. Explain.

1.

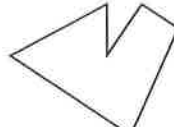


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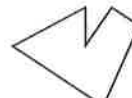


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2.



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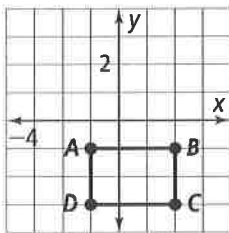


Image

- If a transformation maps $GHIJ$ to $G'H'I'J'$, what is the image of I ? What is the image of \overline{GH} ?
- Point $R(x, y)$ moves 13 units right and 14 units down. What is a rule that describes this translation?

Draw the image of the figure for the given transformation.

- $R_{x\text{-axis}}(ABCD)$



Do you UNDERSTAND?

- Reasoning** The point $(-1, -1)$ is the image under the translation $T_{\langle -5, 5 \rangle}(x, y)$. What is its preimage?
- Writing** Describe the difference between a translation and a reflection.

Chapter 8 Quiz 2

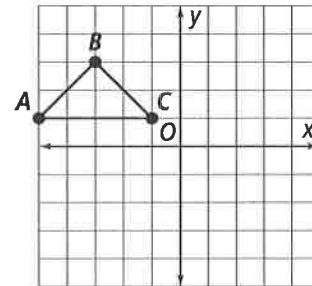
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Lessons 8-3 through 8-4

Do you know HOW?

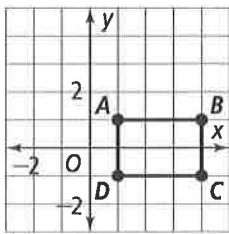
Solve.

1. $\triangle ABC$ has vertices, $A(-5, 1)$, $B(-3, 3)$, and $C(-1, 1)$.
 What are the coordinates of the vertices of
 $(R_{x=0} \circ T_{\langle 0, -3 \rangle})(\triangle ABC)$?



Draw the image of the figure for the given transformation.

2. $r_{(90^\circ, O)}(ABCD)$

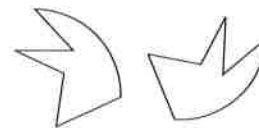


3. $\triangle ONM$ has vertices $O(-4, 2)$, $N(3, 6)$, and $M(0, 3)$. What are the coordinates of the vertices of $(R_{y=1} \circ T_{\langle 3, 0 \rangle})(\triangle ONM)$?

4. Is the reflection of \overline{AB} with vertices $A(2, 3)$ and $B(-1, 2)$, first across $x = 4$, and then across $y = -2$, a translation or a rotation? For a translation, describe the direction and distance. For a rotation, tell the center of rotation and the angle of rotation.

Do you UNDERSTAND?

5. Reasoning In the diagram at right, is one figure a reflection image, a translation image, or a rotation image of the other?



Chapter 10 Quiz 1

Form G

Lessons 10-1 through 10-3

Do you know HOW?

1. Construct a perpendicular bisector of \overline{AF} .



2. Draw an acute angle. Construct its bisector.

Use inductive reasoning to describe the pattern of each sequence. Then find the next two terms.

3. 8, 3, 9, 4, 10, 5, ...

4. 20, 10, 5, 2.5, 1.25, ...

5.

Find a counterexample for each conjecture.

6. The sum of a negative and a positive number is always negative.

7. All parallelograms are rectangles.

Rewrite each statement as a conditional statement.

8. The grass is wet because the water sprinkler system was turned on this morning.

9. A rectangle is a parallelogram with four congruent angles.

10. Write the converse, inverse, and contrapositive of the conditional statement:
If the figure is a parallelogram, then the figure is a quadrilateral. Determine the truth value of each statement. If it is false, provide a counterexample.

Do you UNDERSTAND?

11. **Open-Ended** Write the first 10 terms of a sequence whose first five terms are $-2, 3, -1, 4,$ and 0 . Describe the pattern.

12. **Open-Ended** Explain why the setting of a compass must be greater than $\frac{1}{2}AB$ when constructing a perpendicular bisector of \overline{AB} .

Chapter 10 Quiz 2

Form G

Lessons 10-4 through 10-7

Do you know HOW?

Rewrite each definition as a biconditional.

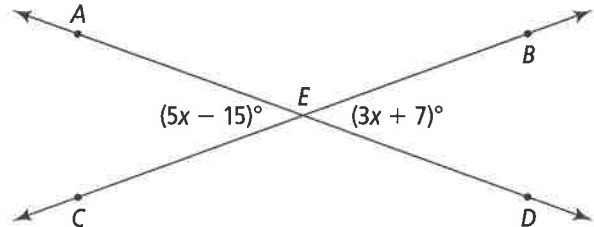
- Squares have four congruent sides and four congruent angles.
- Isosceles trapezoids have two opposite congruent sides.

If possible, make a conclusion from the given true statements. What reasoning did you use?

- If you exercise regularly, then you will have a healthier heart. Ben exercises regularly.
- If you multiply two even numbers, the product is an even number.
If you multiply two odd numbers, the product is an odd number.
- If it is winter vacation, Will visits his grandmother.
If it is December, the zoo is closed.
If Will visits his grandmother, it is December.

Use the diagram at the right for Exercises 6–8.

- Find x .
- Find $m\angle AEC$.
- Find $m\angle CED$.



Do you UNDERSTAND?

9. Reasoning Complete the proof by filling in the reasons that justify the steps.

Given: $BC = 5$; $AB = 3x$

Prove: $AB = 6$



Statements	Reasons
1) $BC = 5$	1) ?
2) $2x + 1 = 5$	2) Substitution Property
3) $2x = 4$	3) ?
4) $x = 2$	4) ?
5) $AB = 3x$	5) Given
6) $AB = 3(2)$	6) ?
7) $AB = 6$	7) Simplify.

Chapter 2 Quiz 1

Form G

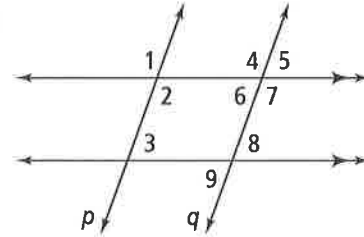
Lessons 2-1 through 2-3

Do you know HOW?

For Exercises 1 - 14, use the diagram to the right.

State the theorem or postulate that justifies each statement.

1. If $\angle 1 \cong \angle 4$, then $p \parallel q$.
2. $\angle 6 \cong \angle 8$
3. $m\angle 7 + m\angle 8 = 180$
4. $\angle 5 \cong \angle 8$
5. If $\angle 2 \cong \angle 4$, then $p \parallel q$.
6. $\angle 8 \cong \angle 9$
7. If $\angle 3 \cong \angle 8$, then $p \parallel q$.
8. $\angle 6 \cong \angle 9$
9. If $m\angle 2 + m\angle 6 = 180$, then $p \parallel q$.



Name two pairs of each type of angle.

10. Corresponding
11. Alternate interior
12. Vertical
13. Same-side interior
14. Same-side exterior

Do you UNDERSTAND?

15. **Error Analysis** A student made the following incorrect statement. What is wrong with her statement? How do you know?

If the alternate interior angles formed by three intersecting lines are complementary, then two of the lines are parallel.

16. **Open-Ended** Give an example from your classroom of two lines that are skew.

Chapter 2 Quiz 2

Form G

Lessons 2-4 through 2-6

Do you know HOW?

In a triangle, $\angle 1$, $\angle 2$, and $\angle 3$ are interior angles, and $\angle 4$ is an exterior angle with remote interior angles $\angle 2$ and $\angle 3$. Find the missing angle measures.

1. $m\angle 2 = 50$ and $m\angle 3 = 80$

2. $m\angle 4 = 100$ and $m\angle 2 = 50$

3. $m\angle 1 = 75$ and $m\angle 3 = 20$

4. $m\angle 4 = 110$ and $m\angle 2 = 70$

5. $m\angle 3 = 40$ and $m\angle 2 = 65$

6. $m\angle 1 = 60$ and $m\angle 3 = 30$

7. Given point Y on line x , construct a line perpendicular to x through Y .



Do you UNDERSTAND?

8. **Open-Ended** A carpenter uses four right angle brackets to make a form to pour a rectangular concrete walkway. Explain how you know the shape is a rectangle and a parallelogram.

9. **Error Analysis** A student made the following incorrect statement. What is wrong with her statement? How do you know?

If line a is parallel to line b , and line b is parallel to line c , then line a must be perpendicular to line c .

Chapter 5 Quiz 1

Form G

Lessons 5-1 through 5-5

Do you know HOW?

Simplify each expression.

1. $6^{-1}(4^{-2})$

2. $(x^{-6})^{-3}$

3. $(xy^{-6})(xy)^3$

4. $a^{-4}b^0$

5. $(8x)^3(3x^0)^{-2}$

6. $(ab^3)(a^0b^{-2})$

Evaluate the exponential function for the given value of x .

7. Evaluate $f(x) = 5 \cdot 3^x$ for $x = 4$.

8. Evaluate $f(x) = 6 \cdot 2^x$ for $x = -3$.

Find the solution of each exponential equation.

9. $6^x = 216$

10. $\frac{1}{49} = 7^x$

11. $(-2)^{x-1} = -32$

Write a rule for each of the following scenarios, then solve.

12. Find the balance in an account after 8 years if \$500 is invested at 7% interest compounded annually.

13. On the first swing, a pendulum swings through an arc of length 60 cm. On each successive swing, the length of the arc is 82% of the length of the previous swing. Find the length of the arc on the fifth swing. Round your answer to the nearest cm.

Do you UNDERSTAND?14. **Reasoning** Does the table below represent a linear or an exponential function? Explain.

X	2	3	4	5
Y	2.25	3.375	4.5	5.625

15. **Writing** Given two functions, $f(x) = 4^x$, and $g(x) = x^4 + 100$, which function will have the greater value for $x = 4$? Which will have the greater value for x values greater than 40? Explain.

Chapter 5 Quiz 2

Form G

Lessons 5-6 through 5-9

Do you know HOW?

Simplify each radical expression.

1. $\sqrt{243}$

2. $\sqrt{25c^3}$

3. $2\sqrt{3x} \cdot 3\sqrt{6x^2}$

4. $\sqrt{\frac{25}{81}}$

5. $(\sqrt{25})^2$

6. $\frac{\sqrt{15}}{\sqrt{3n}}$

Graph each function.

7. $f(x) = \begin{cases} x + 4, & \text{for } x \geq 2 \\ 2x - 1, & \text{for } x < 2 \end{cases}$

8. $f(x) = \sqrt[3]{x+1} - 3$

Find each sum, difference, product or quotient if $f(x) = 2x + 1$, $g(x) = \frac{1}{3}x$, and $h(x) = 7$.

9. $(f + g)(x)$

10. $(g \cdot h)(x)$

11. $\left(\frac{g}{f}\right)(x)$

Do you UNDERSTAND?

12. **Reasoning** The starting salary at a company is \$38,000 per year. The company automatically gives a raise of 3.5% per year. Write the explicit and recursive formulas for the geometric sequence formed by the salary increase.

13. The table at the right shows an Internet company's standard delivery charge for the total cost of an order. Graph the step function for this information.

x	y
$0 < x \leq 15$	5
$15 < x \leq 25$	6
$25 < x \leq 45$	8
$45 < x \leq 65$	11
$65 < x \leq 90$	14

Chapter 3 Quiz 1

Form G

Lessons 3-1 through 3-4

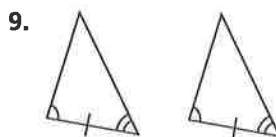
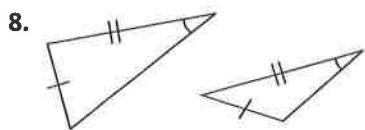
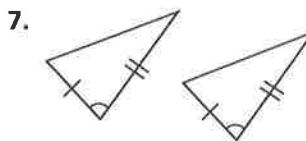
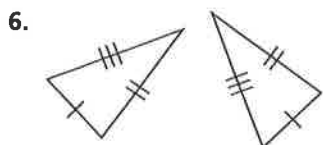
Do you know HOW?

1. Two triangles have the following pairs of congruent sides: $\overline{BD} \cong \overline{FJ}$, $\overline{DG} \cong \overline{JM}$, and $\overline{GB} \cong \overline{MF}$. Write the congruence statement for the two triangles.

$\triangle QRS \cong \triangle TUV$. Name the angle or side that corresponds to the given part.

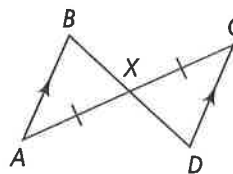
2. $\angle Q$ 3. \overline{RS} 4. $\angle S$ 5. \overline{QS}

State the postulate or theorem that can be used to prove the triangles congruent. If you cannot prove the triangles congruent, write *not enough information*.



Use the diagram at the right. Tell why each statement is true.

10. $\angle A \cong \angle C$
 11. $\angle AXB \cong \angle CXD$
 12. $\triangle ABX \cong \triangle CDX$



Do you UNDERSTAND?

13. Given: $\overline{LM} \cong \overline{NO}$; $\angle LMO \cong \angle NOM$
 Prove: $\triangle LMO \cong \triangle NOM$

