Learning Works Charter School

Integrated Math 2B
Module 7

Student Name: _____ Teacher Name: _____

As you work through the chapters in your Integrated Math 2 course, you will be encouraged to think and to make conjectures while you persevere through challenging problems and exercises. You will make errors – and that's okay! Learning and understanding occur when you make errors and push through mental roadblocks to comprehend and solve new and challenging problems.

Text: *Integrated Math 2,* Big Ideas, 2016

To ensure you are learning, you must show your work for all exercises.
YOU WILL NOT EARN CREDIT FOR ANSWERS WITHOUT WORK.

Chapter 7: Quadrilaterals and Other Polygons (7.1-7.5)
_____ Maintaining Mathematical Proficiency (page 401): Complete exercises #1-4 **all**
_____ 7.1 Angles of Polygons: Read the lesson and complete exercises
    #3, 5, 6, 7, 8, 11, 13, 15, 17, 19, 20, 23, 24, 27, 28, 53, 54
_____ 7.2 Properties of Parallelograms: Read the lesson and complete exercises
    #1, 3, 4, 7-15 **all**, 21, 22, 48, 49, 50
_____ 7.3 Proving That a Quadrilateral is a Parallelogram: Read the lesson and complete exercises
    #1, 3, 4, 5, 6, 7, 9, 10, 14, 16, 17, 21, 22, 51, 52, 53, 54
_____ 7.4 Properties of Special Parallelograms: Read the lesson and complete exercises
    #1-6 **all**, 9, 10, 13, 23, 24, 29, 30, 31, 34, 35, 36, 49, 51, 53, 65, 66, 67, 68
_____ 7.5 Properties of Trapezoids and Kites: Read the lesson and complete exercises
    #1, 3, 7, 8-12 **all**, 15, 17, 19-24 **all**

Students must complete the Chapter Review with a teacher or tutor at school.

_____ Chapter Review (pages 452-454): Complete exercises #1-28 **all**

Chapter 8: Similarity (8.1-8.6)
_____ Maintaining Mathematical Proficiency (page 459): Complete exercises #1-10 **all**
_____ 8.1 Dilations: Read the lesson and complete exercises
    #3, 4, 15, 18, 23, 30, 31, 37
_____ 8.2 Similarity and Transformations: Read the lesson and complete exercises
    #1, 3, 4, 5, 16, 17
_____ 8.3 Similar Polygons: Read the lesson and complete exercises
    #1, 5, 6, 7, 35, 57, 58, 59

_____ 8.4 Proving Triangle Similarity by AA: Read the lesson and complete exercises
#1, 2, 3, 4, 7, 19, 20
_____ 8.5 Proving Triangle Similarity by SSS and SAS: Read the lesson and complete exercises
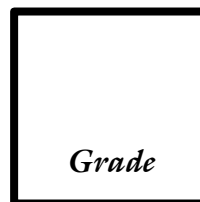#2, 3, 4, 9, 10
_____ **SKIP Chapter 8 Review**

Students must complete the Project with a teacher or tutor at school.

_____ Complete the attached Project **(No project = No credit)**

A teacher or tutor reviewed the Chapter Review and Project with the student.

Date: _____ Signature: _____

Grade

Integrated Math 2 Project
Module 7: Quadrilaterals and Other Polygons
Textbook Pages 401-456

**Shine Bright Like a Diamond**

Before beginning this activity, watch the corresponding STEM Video. You can access it by clicking on STEM Videos in the Chapter 7 Resources, or you can use this link:
https://www.bigideasmath.com/protected/content/stem/video.php?book=77&id=100835620
Please note that the link will only work if you are logged in to the Big Ideas site.

Have you ever heard someone say, "Diamonds are a girl's best friend"? What are the properties of diamonds that make them shine? In what ways does mathematics contribute to the brilliance of a diamond? Let's investigate!

1. Diamonds are rated on many properties. *Luster* measures the amount of reflected light from the outer facets, or flat polygon-shaped faces, of the diamond. As the number of facets increases, there are more angles for the light to reflect off of. The cut, or shape, of a diamond is mainly dependent on the original shape of the stone. For each diamond cut shown below, name two different geometric shapes you see within the cut, and complete the rest of the chart.
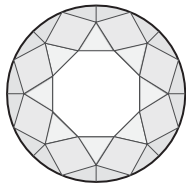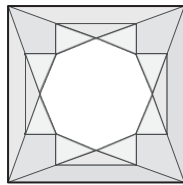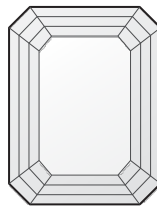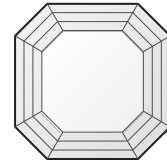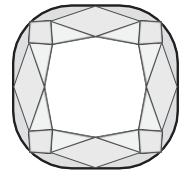
| Round | Princess | Emerald | Asscher | Cushion |

Diamond cut	Geometric shape in cut	Drawing of geometric shape with congruent sides and/or angles marked	# of times the named geometric shape appears in the cut	Sum of interior angles of geometric shape	Properties that make the geometric shape unique
Round					

Princess					
Emerald					
Asscher					
Cushion					

2. *Brilliance* measures the amount of light that passes into the diamond and reflects out from its internal surfaces. A round center cut diamond is shown.
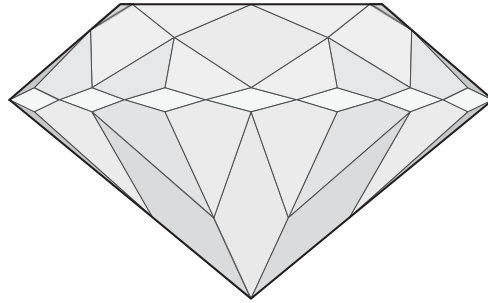
   b. . Outline one irregular quadrilateral in the diamond. The measure of three of the angles of one of the irregular quadrilateral facets of the diamond are 60º, 70º, and 110º What is the measure of the fourth angle? Explain your reasoning.

   c. Outline one rhombus in the diamond. The measure of two of the angles of one of the rhombus facets of the diamond are 30º and 150º. What are the measures of the other two angles? Explain your reasoning.

   d. Outline and name two other shapes you see in the drawing.

   e. Estimate the number of facets in the cut. Explain your reasoning.