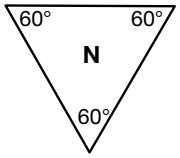
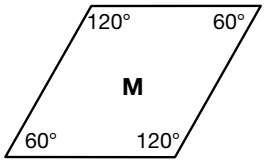
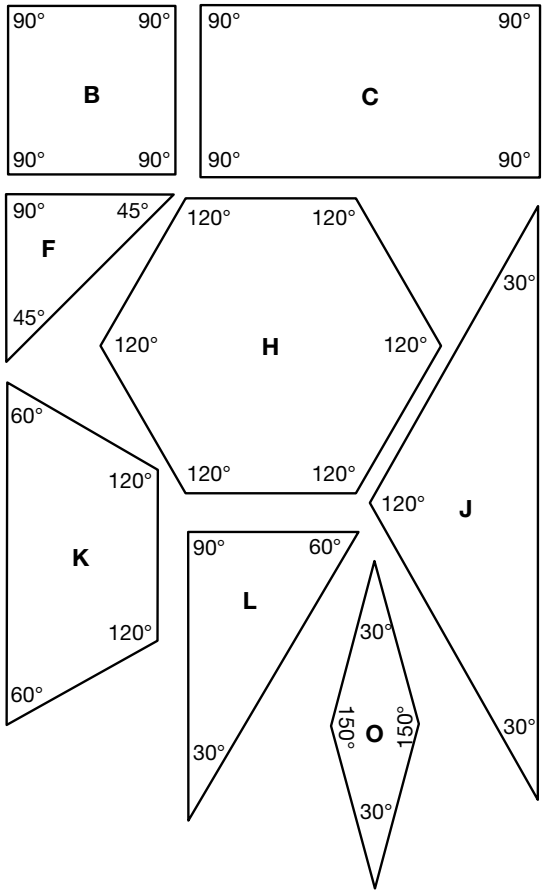
Student Activity Book

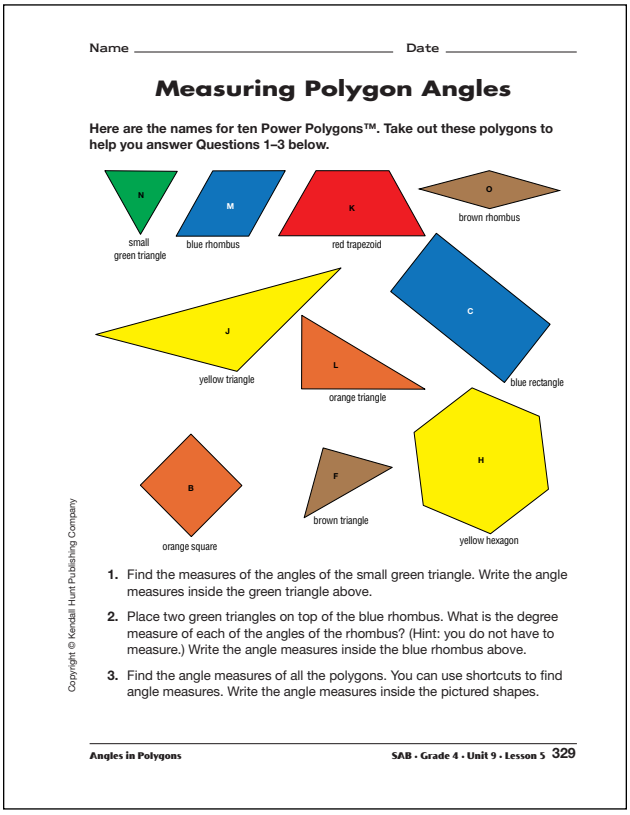
Measuring Polygon Angles

Questions 1–10 (SAB pp. 329–331)

1.* 

2.* 

3. 



Name _____ Date _____

Measuring Polygon Angles

Here are the names for ten Power Polygons™. Take out these polygons to help you answer Questions 1–3 below.

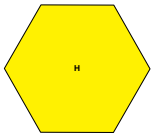
1. Find the measures of the angles of the small green triangle. Write the angle measures inside the green triangle above.
2. Place two green triangles on top of the blue rhombus. What is the degree measure of each of the angles of the rhombus? (Hint: you do not have to measure.) Write the angle measures inside the blue rhombus above.
3. Find the angle measures of all the polygons. You can use shortcuts to find angle measures. Write the angle measures inside the pictured shapes.

***Student Activity Book* - Page 329**

***Answers and/or discussion are included in the lesson.**

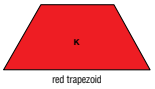
Name _____ Date _____

4. Explain the shortcuts you can use to find the angle measures of the yellow hexagon.



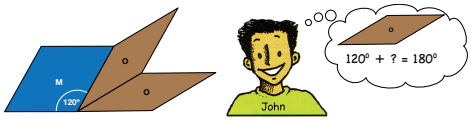
yellow hexagon

5. Explain the shortcuts you can use to find the angle measures of the red trapezoid.



red trapezoid

6. John decided that the small angle of a brown rhombus is 60°. He noticed that when he put together the large angle of a blue rhombus with the small angles on two brown rhombuses, they made a3 180° angle.



Do you agree that the small angle on a brown rhombus is 60°? Why or why not?

***Student Activity Book* - Page 330**

Name _____ Date _____

7. Linda wrote the following number sentence to show her shortcuts. Find the missing angle and show which Power Polygons™ she might have put together.

$60° + n = 90°$

A polygon is a **regular polygon** if all sides are the same length and all angles have the same degree measure.

8. Use the Power Polygons™ to trace three polygons that are regular and three that are not regular in the table below. Name each polygon.

Regular Polygons	Not Regular Polygons

9. Show or tell how to decide if the blue rhombus is a regular polygon.

10. Show or tell how to decide if the yellow hexagon is a regular polygon.

***Student Activity Book* - Page 331**

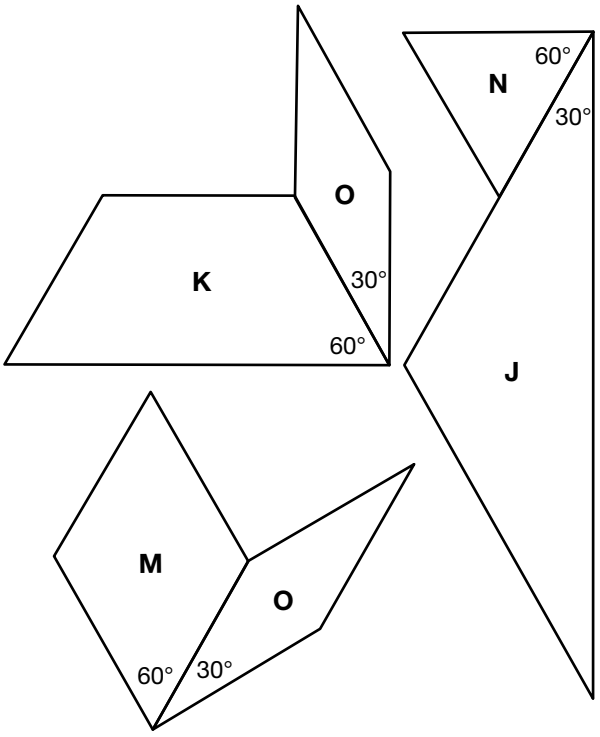
4. Answers may vary. Possible response: Two red trapezoids (K) cover the yellow hexagon (H), which is a regular shape. I know one angle is 120º, so they all are 120º.

5. Answers may vary. Possible response: I used a small green triangle (N). The acute angle is 60º and the obtuse angle is two 60º angles which is 120º.

6. No, John did not consider that there are two brown rhombuses. He should have divided 60º by 2.

7. N = 30º; 60º + 30º = 90º

   Responses may vary. Possible response:



8. Regular polygons include the small green triangle (N), orange square (B), and yellow hexagon (H). All others are not regular.

9. Sides are equal but all angles are not equal.

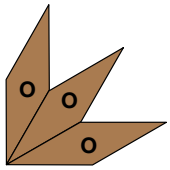
10. All sides and all angles are equal.

Student Activity Book

Add and Subtract Angles

Questions 1–5 (SAB pp. 332–333)

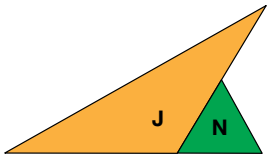
1. ∠A is about 35°
   ∠B is about 155°
   ∠C is about 135°
   ∠D is about 90°
   ∠E is about 29°
   ∠F is about 276°
2. ∠R = 65°
   ∠U = 45°
   ∠X = 10°
3. **A.** 90°
   B. 90°
   C. 90°
   D. The sum of the acute angles in a right triangle is 90°.
4. ∠G = 20°
   ∠H = 70°
5. **A.** n = 30°

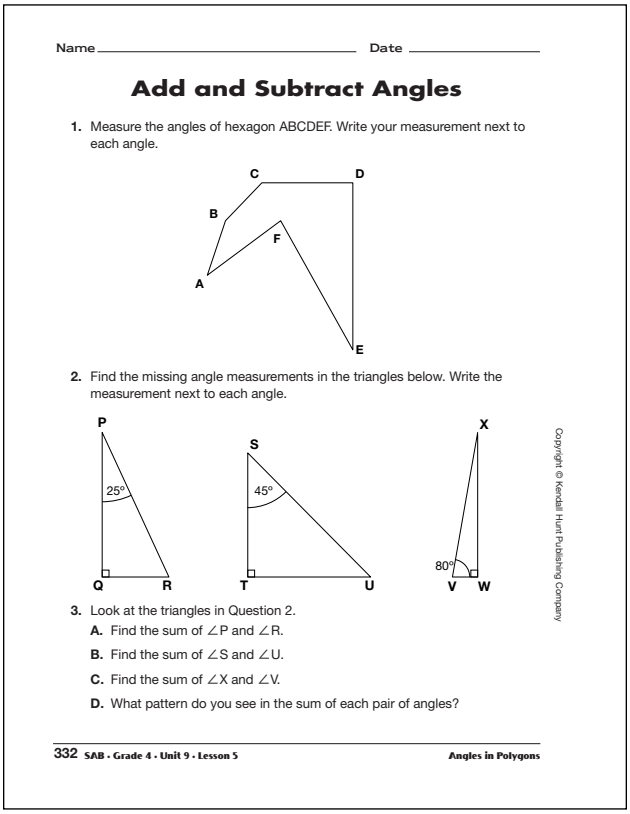


B. n = 60°

C. n = 45°

D. n = 60°





Name _____ Date _____

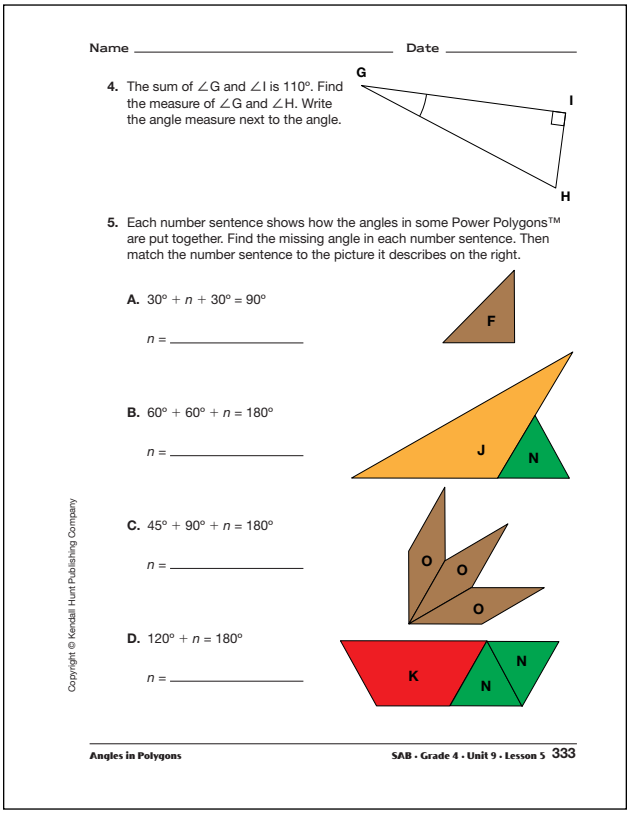
Add and Subtract Angles

1. Measure the angles of hexagon ABCDEF. Write your measurement next to each angle.

2. Find the missing angle measurements in the triangles below. Write the measurement next to each angle.

3. Look at the triangles in Question 2.
   A. Find the sum of ∠P and ∠R.
   B. Find the sum of ∠S and ∠U.
   C. Find the sum of ∠X and ∠V.
   D. What pattern do you see in the sum of each pair of angles?

***Student Activity Book* - Page 332**



Name _____ Date _____

4. The sum of ∠G and ∠I is 110°. Find the measure of ∠G and ∠H. Write the angle measure next to the angle.

5. Each number sentence shows how the angles in some Power Polygons™ are put together. Find the missing angle in each number sentence. Then match the number sentence to the picture it describes on the right.

A. 30° + *n* + 30° = 90°
n = _____

B. 60° + 60° + *n* = 180°
n = _____

C. 45° + 90° + *n* = 180°
n = _____

D. 120° + *n* = 180°
n = _____

***Student Activity Book* - Page 333**