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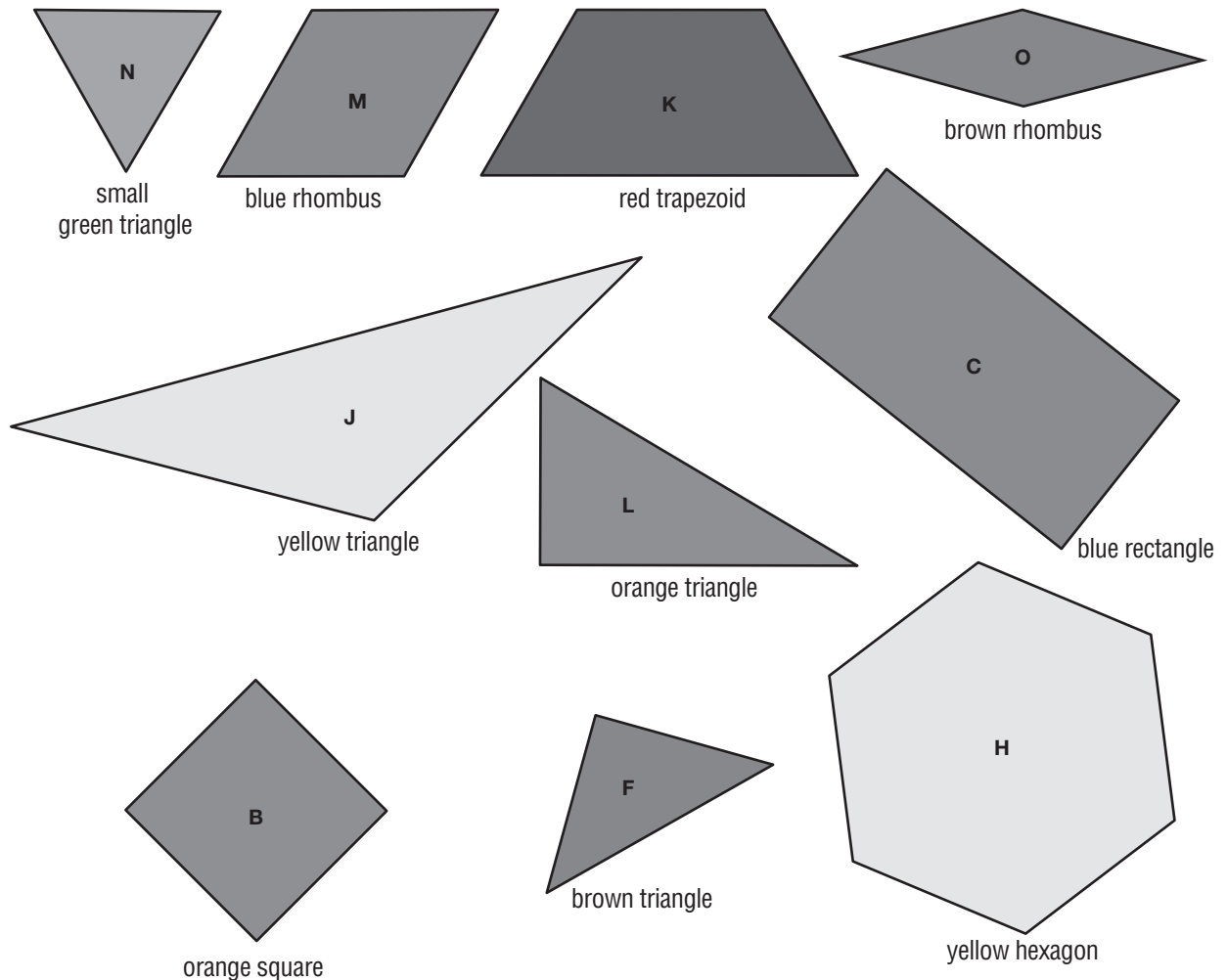
Here are the names for ten Power Polygons™. Take out these polygons to help you answer Questions 1–3 below.

N
small
green triangle

M
blue rhombus

K
red trapezoid

O
brown rhombus

J
yellow triangle

C
blue rectangle

L
orange triangle

B
orange square

F
brown triangle

H
yellow hexagon

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.

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

H

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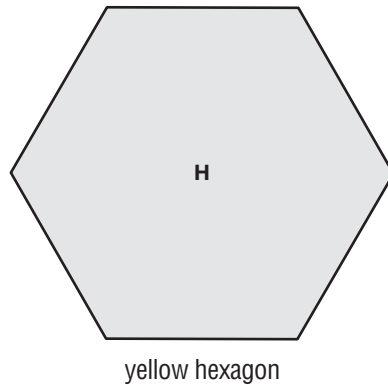
5. Explain the shortcuts you can use to find the angle measures of the red trapezoid.

K

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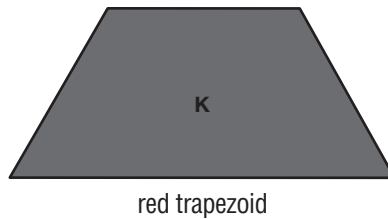
6. John decided that the small angle of a brown rhombus is 60°. He noticed that when he put together the large angle of a blue rhombus with the small angles on two brown rhombuses, they made a 180° angle.

O

M

O

120°

John

o

$120° + ? = 180°$
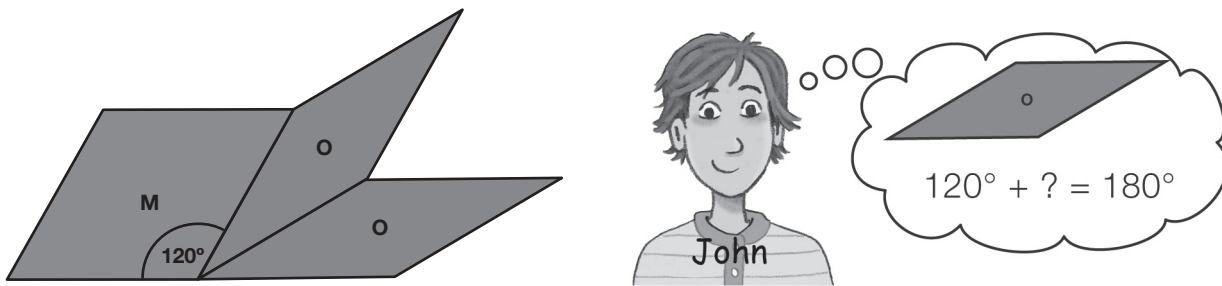
Do you agree that the small angle on a brown rhombus is 60°? Why or why not?

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.