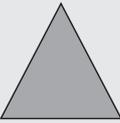
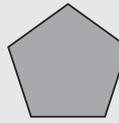
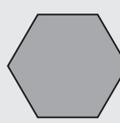
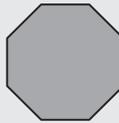
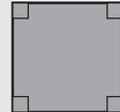


# Learn About

## Using Geometry: Plane Figures

A **polygon** is a plane figure named for its number of sides and angles.

Polygons (Plane Figures)				
Triangle  3 sides 3 angles	Quadrilateral  4 sides 4 angles	Pentagon  5 sides 5 angles	Hexagon  6 sides 6 angles	Octagon  8 sides 8 angles

Quadrilaterals (Polygons with 4 sides and 4 angles)					
Parallelogram  Opposite sides equal and parallel	Rectangle  Parallelogram with 4 right angles	Rhombus  Parallelogram with 4 equal sides	Square  4 equal sides 4 right angles	Trapezoid  Only 1 pair of parallel sides	Kite  2 pairs of equal sides that touch

A **circle** is a plane figure that is not a polygon because it does not have straight line segments and angles.

The sum of the measures of the three inside angles of any triangle is  $180^\circ$ . The sum of the measures of the four inside angles of any quadrilateral is  $360^\circ$ . Read the problem.

Polly is designing picture frames. She drew a diagram of her newest picture frame. What is the name of this quadrilateral?



The quadrilateral has only one pair of parallel sides, therefore it is a **trapezoid**.



A **polygon** is a plane figure named for its number of sides.  
A **circle** is a plane figure that is not a polygon.

*Look at the answer choices for each question.  
Read why each answer choice is correct or  
not correct.*

### 1. What is the perimeter of the patio?

**(A)** 100 metres

This answer is not correct because the perimeter is the sum of the lengths of all the sides, not the square of one side.

$$10 + 10 + 6 + 6 = 32 \text{ m, not } 100 \text{ m.}$$

**(B)** 60 metres

This answer is not correct because the perimeter is the sum of the lengths of all the sides, not the product of the length and width.

$$10 + 10 + 6 + 6 = 32 \text{ m, not } 60 \text{ m.}$$

**(C)** 36 metres

This answer is not correct because the perimeter is the sum of the lengths of all the sides, not the square of one side.

$$10 + 10 + 6 + 6 = 32 \text{ m, not } 36 \text{ m.}$$

**(D)** 32 metres

This answer is correct because the perimeter is the sum of the lengths of all the sides.

$$10 + 10 + 6 + 6 = 32 \text{ m.}$$

### 2. What is the area of the patio?

**(A)** 100 square metres

This answer is not correct because the area of a rectangle is equal to the product of the length and width, not the square of one side.  
 $10 \times 6 = 60 \text{ m}^2$ , not  $100 \text{ m}^2$ .

**(B)** 60 square metres

This answer is correct because the area of a rectangle is equal to the product of the length and width.  
 $10 \times 6 = 60 \text{ m}^2$ .

**(C)** 36 square metres

This answer is not correct because the area of a rectangle is equal to the product of the length and width, not the square of one side.  
 $10 \times 6 = 60 \text{ m}^2$ , not  $36 \text{ m}^2$ .

**(D)** 32 square metres

This answer is not correct because the area of a rectangle is equal to the product of the length and width, not the sum of the length of all sides.  
 $10 \times 6 = 60 \text{ m}^2$ , not  $32 \text{ m}^2$ .

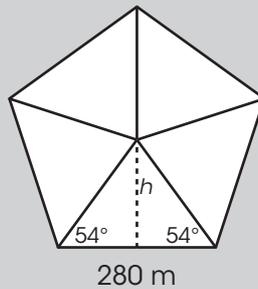
# Lesson

# 6

*Read the passage.  
Then do Numbers 1–5.*

## The Pentagon

Named for its shape, the Pentagon is the headquarters of the United States Department of Defense. The building is located in Arlington, Virginia, just outside Washington, DC. The construction of the Pentagon began in 1941. It houses approximately 23,000 workers. It is one of the largest buildings in the world in terms of floor space. The length of each outer wall of the Pentagon is approximately 280 metres.



1. What is the approximate perimeter of the Pentagon?

- (A) 280 metres
- (B) 1120 metres
- (C) 1400 metres
- (D) 78,400 metres

2. The pentagon in the diagram above is divided into five triangles. Each triangle has two angles that measure  $54^\circ$  each. What is the measure of the third angle of the triangle?

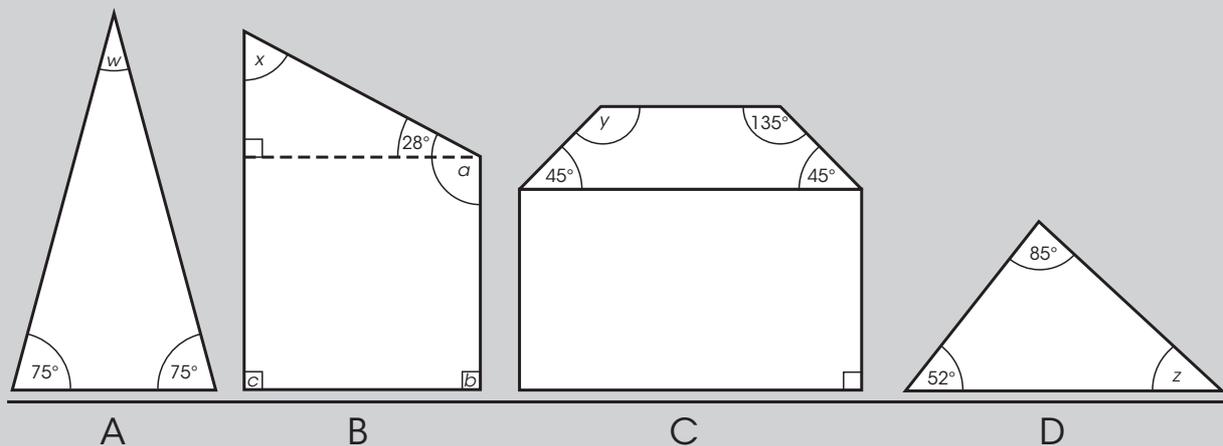
- (A)  $54^\circ$
- (B)  $72^\circ$
- (C)  $108^\circ$
- (D)  $180^\circ$

# Lesson 14

Read the passage.  
Then do Numbers 1–5.

## Surveying Angles

Mel and Tracy were curious about some old surveying equipment they found in the shed. Their father explained that surveyors look through scopes to measure angles. Using the angle measures and some mathematics, they can find the height of hills, bridges and buildings. He let the girls use a scope that would show the measures of angles for roofs and the edges of buildings. Some of their measurements are shown in the diagram.



1. On building A, what is the measure of  $\angle w$ ?

- (A)  $205^\circ$
- (B)  $75^\circ$
- (C)  $45^\circ$
- (D)  $30^\circ$

2. On building B, what is the measure of  $\angle x$ ?

- (A)  $28^\circ$
- (B)  $62^\circ$
- (C)  $90^\circ$
- (D)  $242^\circ$

# Self-Assessment 2

Lessons 6–10

*Answer these questions after you have completed Lessons 6–10. Before you begin, re-read what you wrote in Self-Assessment 1.*

## **FOCUS on Using Geometry, Book F**

Name \_\_\_\_\_ Date \_\_\_\_\_

1. Rate your work in Lessons 6–10. Circle your answer.

successful

somewhat successful

needs improvement

2. Did any of the questions give you trouble? \_\_\_\_\_

If so, what kind of trouble did you have?

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Is this the same kind of trouble you had in Lessons 1–5? \_\_\_\_\_

3. Did you find the questions easier or more difficult than those in Lessons 1–5?

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Why do you think this is so?

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4. Did you meet the goal you set for yourself for Lessons 6–10? \_\_\_\_\_

Why or why not?

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5. What is your goal for Lessons 11–15?

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Cut along the dotted line.