Area of Regular Polygons

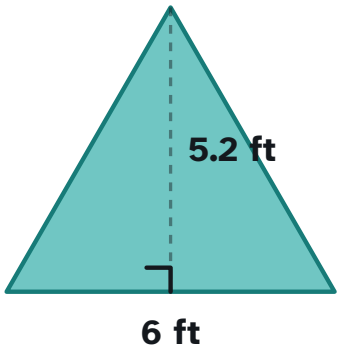
Find the area of a regular polygon by splitting it into equal triangles.

Name _____ **Date** _____

Tonight's spark

A school hallway has a skylight shaped like a hexagon. Each side is 6 feet. A triangle from the center to one side is about 5.2 feet tall. About how many square feet of glass does the skylight need?

Guess first: is it more than 50 square feet, or less?



Our class model: split into equal triangles

Try it

Work it out on paper. Write one answer on each line.

1 **Which describes a regular polygon?**

A. All sides equal and all angles equal **B.** Only two sides equal **C.** Exactly one right angle **D.** Sides of any length

My answer _____

2 **A regular octagon has 8 sides. Into how many equal triangles can it be split from its center?**

A. 6 **B.** 8 **C.** 10 **D.** 4

My answer _____

3 **A regular hexagon is split into 6 equal triangles of 10 square units each. What is the area of the hexagon?**

A. 16 square units **B.** 10 square units **C.** 36 square units **D.** 60 square units

My answer _____

4 **A triangle inside a regular polygon has a base of 4 and a height of 3. What is its area?**

A. 12 square units **B.** 7 square units **C.** 6 square units **D.** 24 square units

My answer _____

5 **A regular pentagon splits into 5 triangles. Each triangle has a base of 6 and a height of 5. What is the area of the pentagon?**

A. 75 square units **B.** 15 square units **C.** 150 square units **D.** 20 square units

My answer _____

Talk about it

How many triangles fit inside the hexagon?

Home mission

Draw a hexagon on paper. Draw lines from the middle to each corner. Count the triangles. If one triangle is 10 square units, how would you find the whole hexagon?

If we get stuck, ask

- How many sides does the shape have? That is how many triangles we make.
- Let's find one triangle first, then multiply by the number of sides.
- Did we multiply by the number of triangles, or did we stop at one?

Do it on a screen

Scan or type the link. Same lesson, with hints.

eduwonderlab.com/lessons/5-9/homework.html

How did it feel? (optional)

Tricky Getting there Got it