Geometry

11.6 Areas of Regular Polygons

Apothem

edge

perpendicular

center

* A segment drawn from the \_\_\_\_\_\_\_\_\_\_ of a regular polygon \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_ (also bisects edge)

## Area of a Regular Polygon

perimeter

apothem

Where P is the \_\_\_\_\_\_\_\_\_\_\_\_\_ and a is the \_\_\_\_\_\_\_\_\_\_\_

## Typical steps to find area of regular polygon

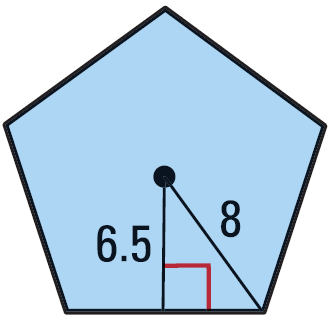
central

1. Find ½ of \_\_\_\_\_\_\_\_\_\_\_\_ angle

apothem

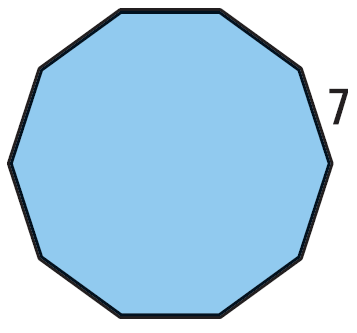
1. Use trigonometry to find \_\_\_\_\_\_\_\_\_\_\_\_   
   tan, sin, cos

Find the area of the regular polygon.



Pythagorean theorem to find side

Area

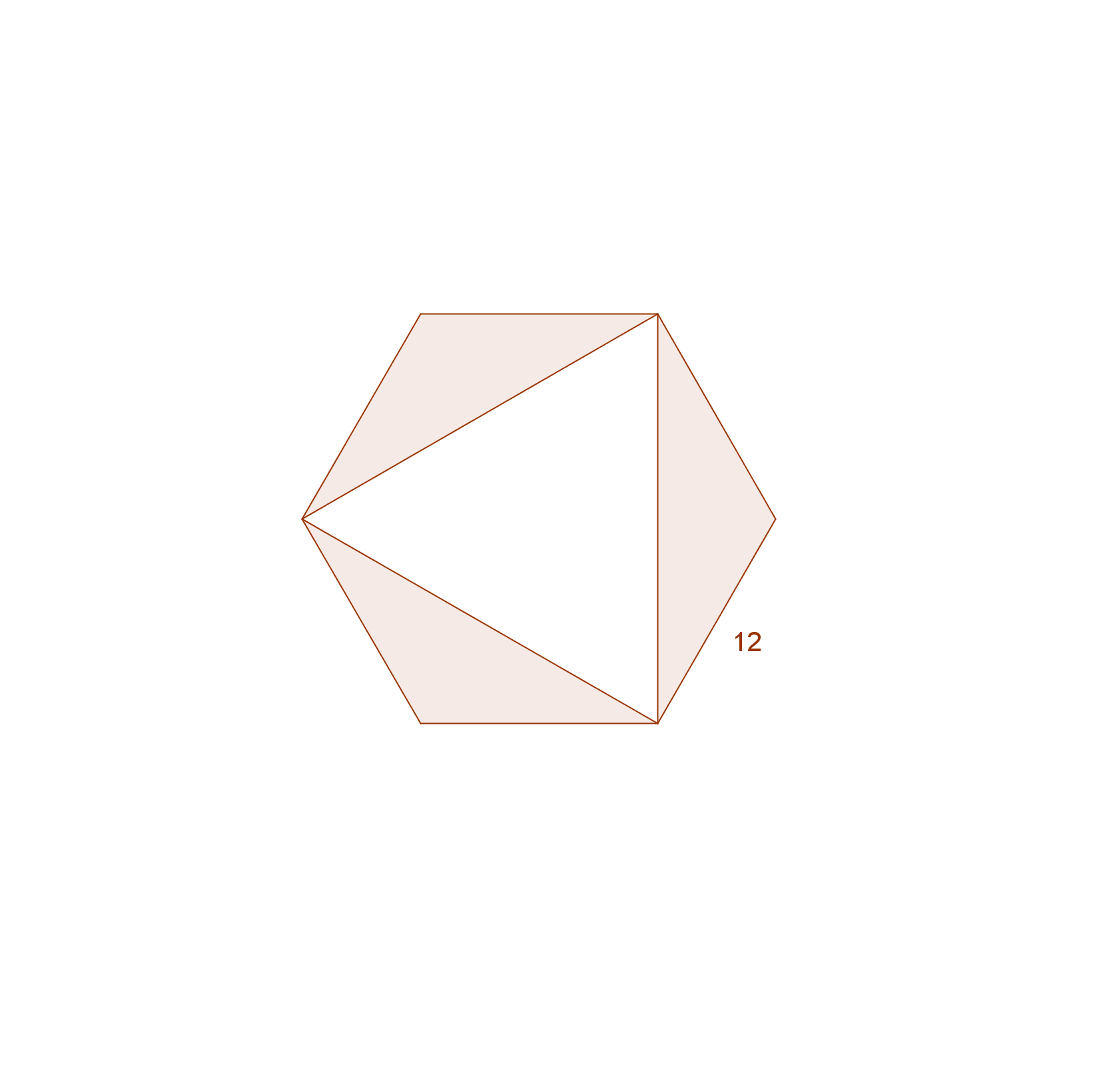


Find ½ central angle

Find apothem

Find area

Find the area of the shaded region



Find the area of the hexagon and subtract the area of the triangle.

Hexagon:

Apothem

Area

Triangle: Find the length of the segment from the center to the vertex.

Apothem

Side

Area

Subtract the areas 🡪 374.12 – 187.06 = 187.06

Assignment: 765 #2-32 even, 36, 38, 47-52 all = 24