

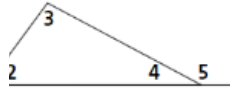
Mornin!

Here's your warm-up:



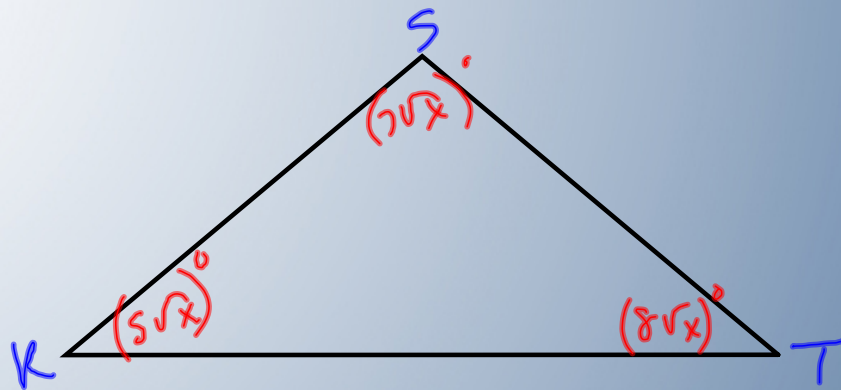
A triangle with a 90° angle has sides that are 3 cm, 4 cm, and 5 cm long. Classify the triangle by its sides and angles.

the diagram for Exercises 2–6.

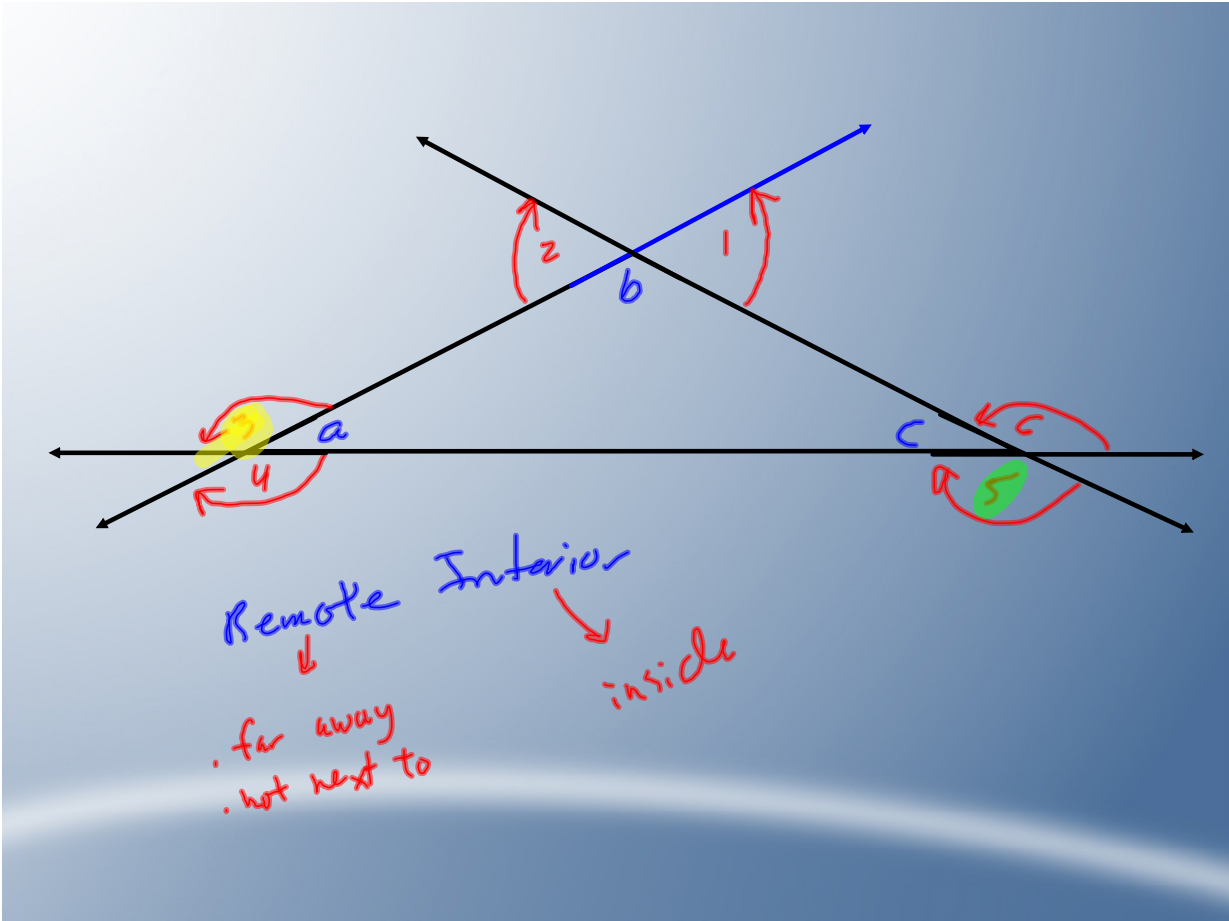


2. Find $m\angle 3$ if $m\angle 2 = 70$ and $m\angle 4 = 42$.
3. Find $m\angle 5$ if $m\angle 2 = 76$ and $m\angle 3 = 90$.
4. Find x if $m\angle 1 = 4x$, $m\angle 3 = 2x + 28$, and $m\angle 4 = 32$.
5. Find x if $m\angle 2 = 10x$, $m\angle 3 = 5x + 40$, and $m\angle 4 = 3x - 4$.
6. Find $m\angle 3$ if $m\angle 1 = 125$ and $m\angle 5 = 160$.

52



$$\begin{aligned}5\sqrt{x} + 7\sqrt{x} + 8\sqrt{x} &= 180 \\20\sqrt{x} &= 180 \\ \frac{20\sqrt{x}}{20} &= \frac{180}{20} \\ \sqrt{x} &= 9 \\ x &= 81\end{aligned}$$



Ch 3 Q 1

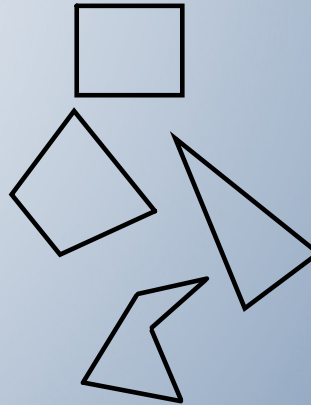
- ① Conv Corr L's Post (3-2)
- ② Alt Int L's Thm (3-1)
- ③ SSI L's Thm (3-2)
- ④ Corr L's Post (3-1)
- ⑤ Conv Alt Int L's Thm (3-3)
- ⑥ Vert L's Thm (2-1)
- ⑦ Conv Corr L's Post (3-2)
- ⑧ Corr L's Post (3-1)
- ⑨ Conv SSI L's Thm (3-4)

⑩ $x + 40 = 90$
 $x = 50$

$y + 90 + 60 = 180$
 $y = 30$

$50 + 30 + (2z - 30) = 180$
 $2z - 30 = 100$
 $2z = 130$
 $z = 65$

Yes



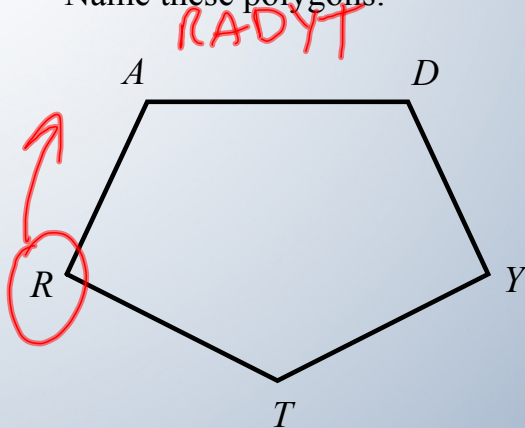
No



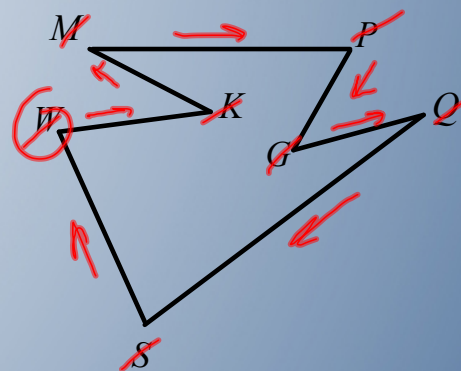
Polygon

A closed geometric figure formed by connecting line segments endpt to endpt, each seg intersecting exactly 2 others.

Name these polygons:



WKMPGQS

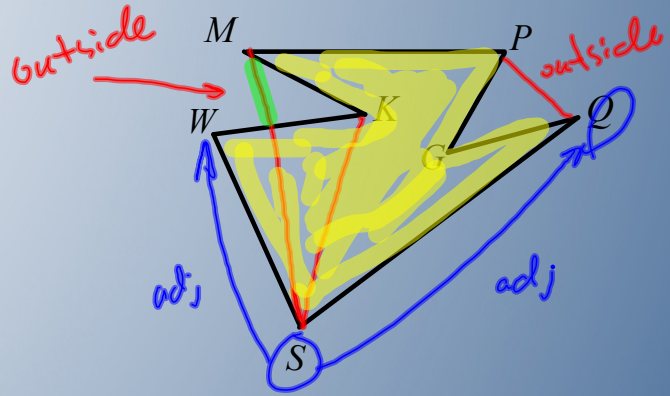


Pick any vertex,
...then list the label of each vertex in order.

It doesn't matter if you go clockwise or counter-clockwise!
...just pick a direction and go!

Classifying polygons:

1. By # of sides
2. As *concave* or *convex*



New term: diagonal

Concave: if part of any diagonal goes outside.

Convex: all diagonals completely inside.

**** convex unless told otherwise ****

Names of polygons:

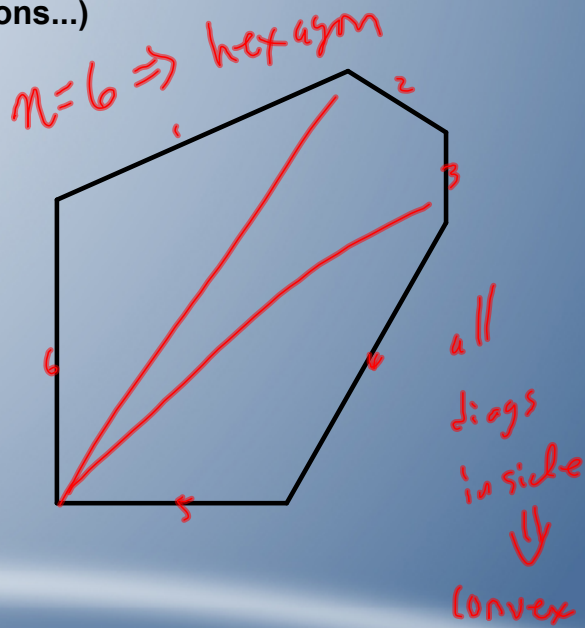
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
8	octagon
9	nonagon
10	decagon
12	dodecagon
n	n -gon

13-gon
1,813,623-gon
7-gon
3-gon

1 Classify this polygon by # of sides and either as concave or convex.

(you will need to select 2 options...)

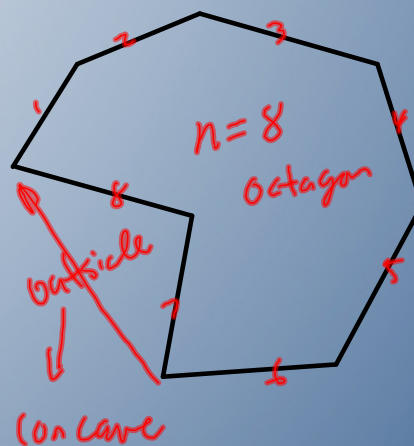
- A Pentagon
- B Quadrilateral
- C Hexagon
- D Octagon
- E 7-gon
- F Concave
- G Convex



2 Classify this polygon by # of sides and either as concave or convex.

(you will need to select 2 options...)

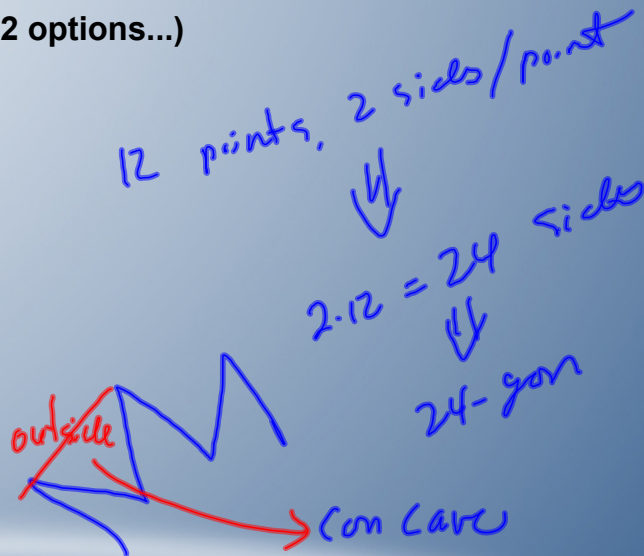
- A Pentagon
- B Quadrilateral
- C Hexagon
- D Octagon
- E 7-gon
- F Concave
- G Convex



3 Classify the 12 pointed star at the center of the tilework pictured in the middle of page 144.

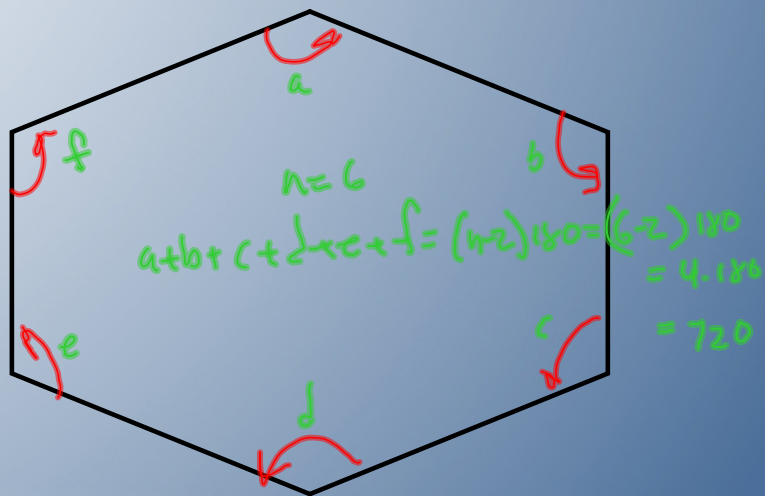
(you will need to select 2 options...)

- A Dodecagon
- B 20-gon
- C 12-gon
- D Heptagon
- E 24-gon
- F Concave
- G Convex



Theorem 3-9 The Polygon Angle-Sum Theorem

The sum of the measure of the int \angle 's of an n -gon is $(n - 2) \cdot 180$



- 4 Find the sum of the measure of the angles of a 13-gon.

$$n = 13$$

$$\begin{aligned} 180(n-2) &= 180(13-2) \\ &= 180(11) \\ &= 1980 \end{aligned}$$

- 5 The sum of the measures of the angles of a given polygon is 720.

Find the **number of sides**.

Thm 3-9 say sum of measures is $180(n-2)$
 $n = \# \text{ sides}$

$$\frac{720}{180} = \frac{180(n-2)}{180}$$

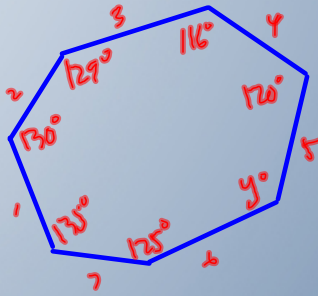
$$\begin{array}{r} 4 = n-2 \\ +2 \quad +2 \\ \hline 6 = n \end{array}$$

6 sides

6 Pg 147, #18

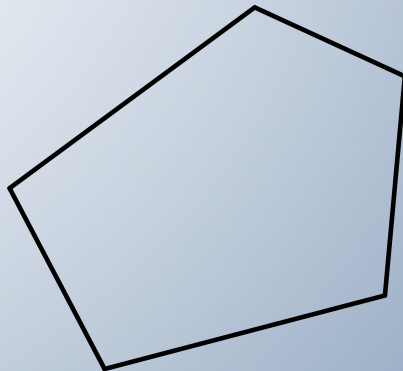
$y = ?$

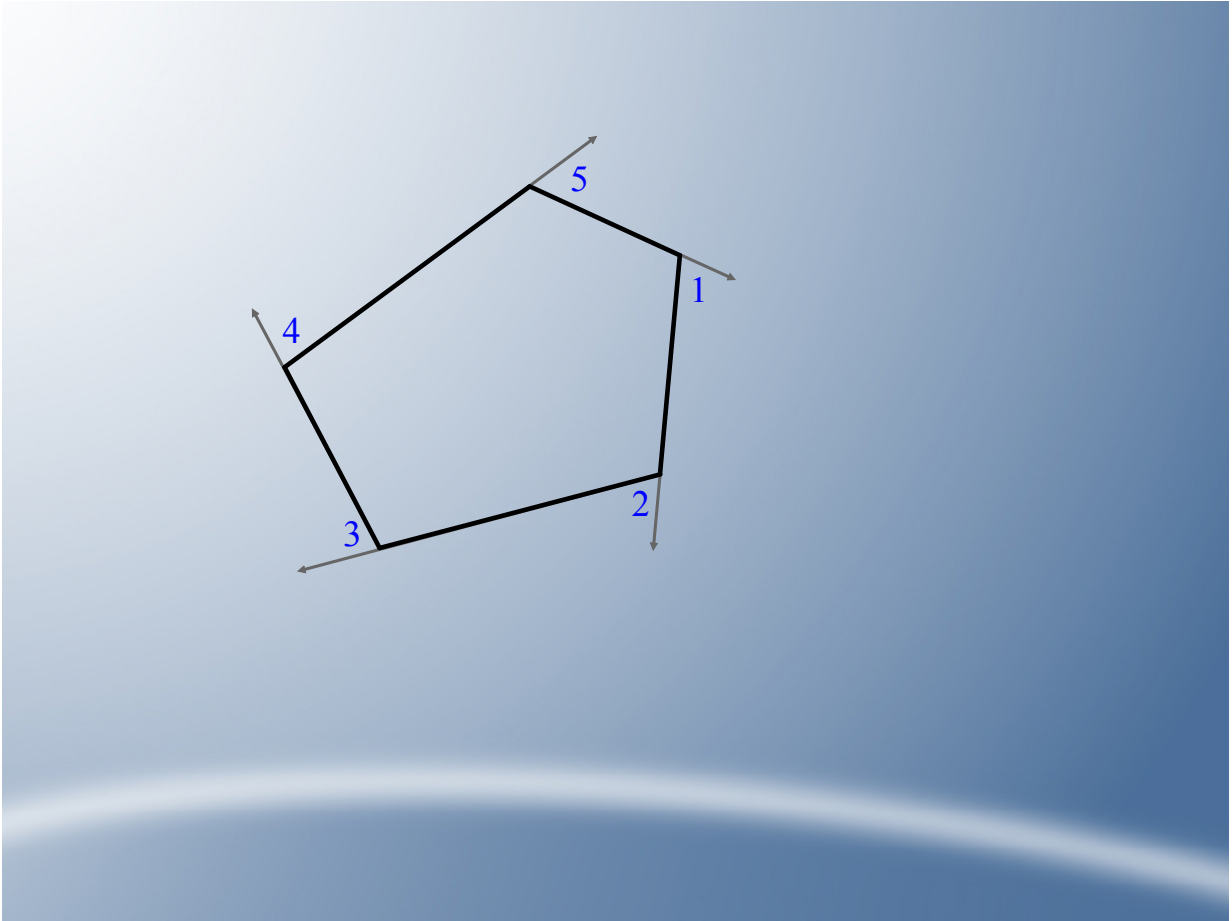
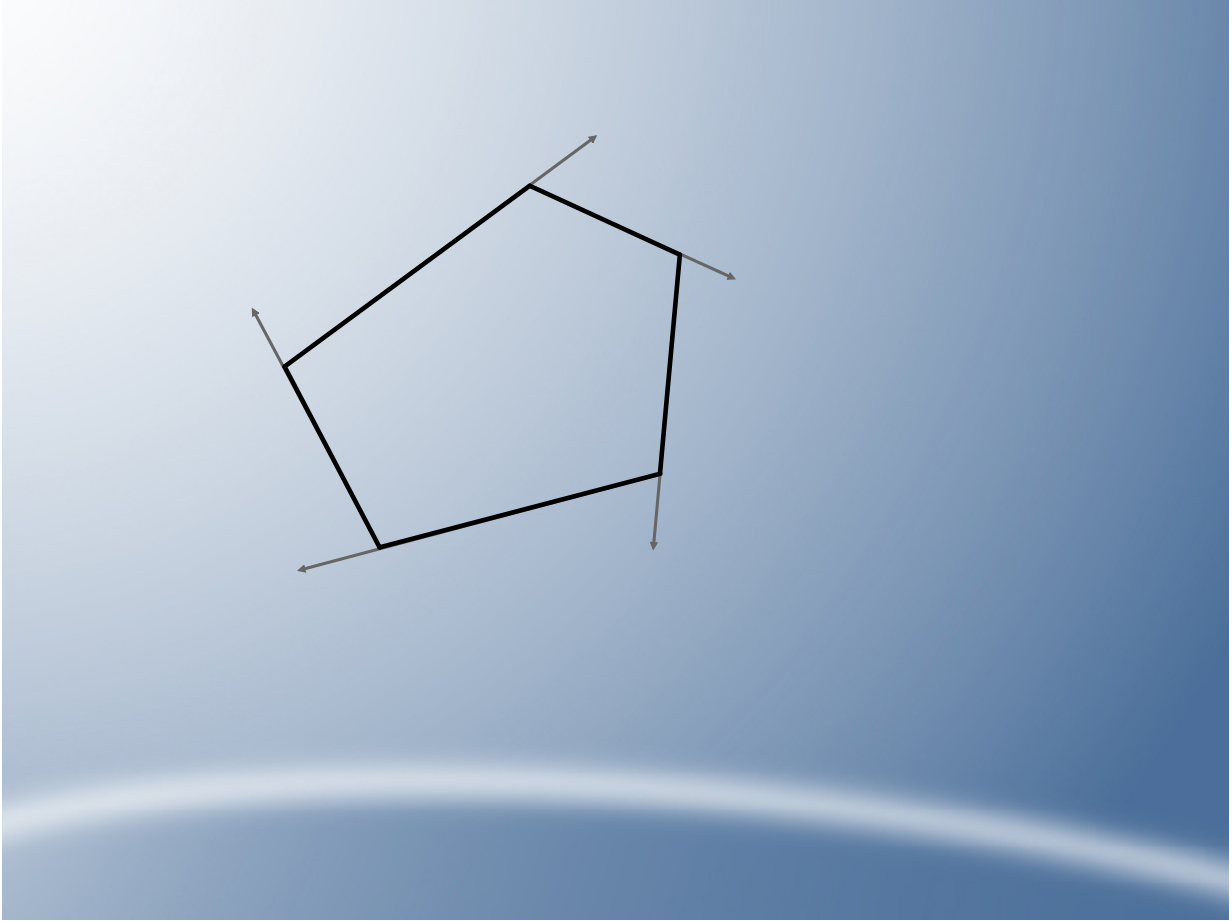
$$\begin{aligned}n &= 7 \\180(n-2) & \\&= 180(7-2) \\&= 180 \cdot 5 = 900\end{aligned}$$

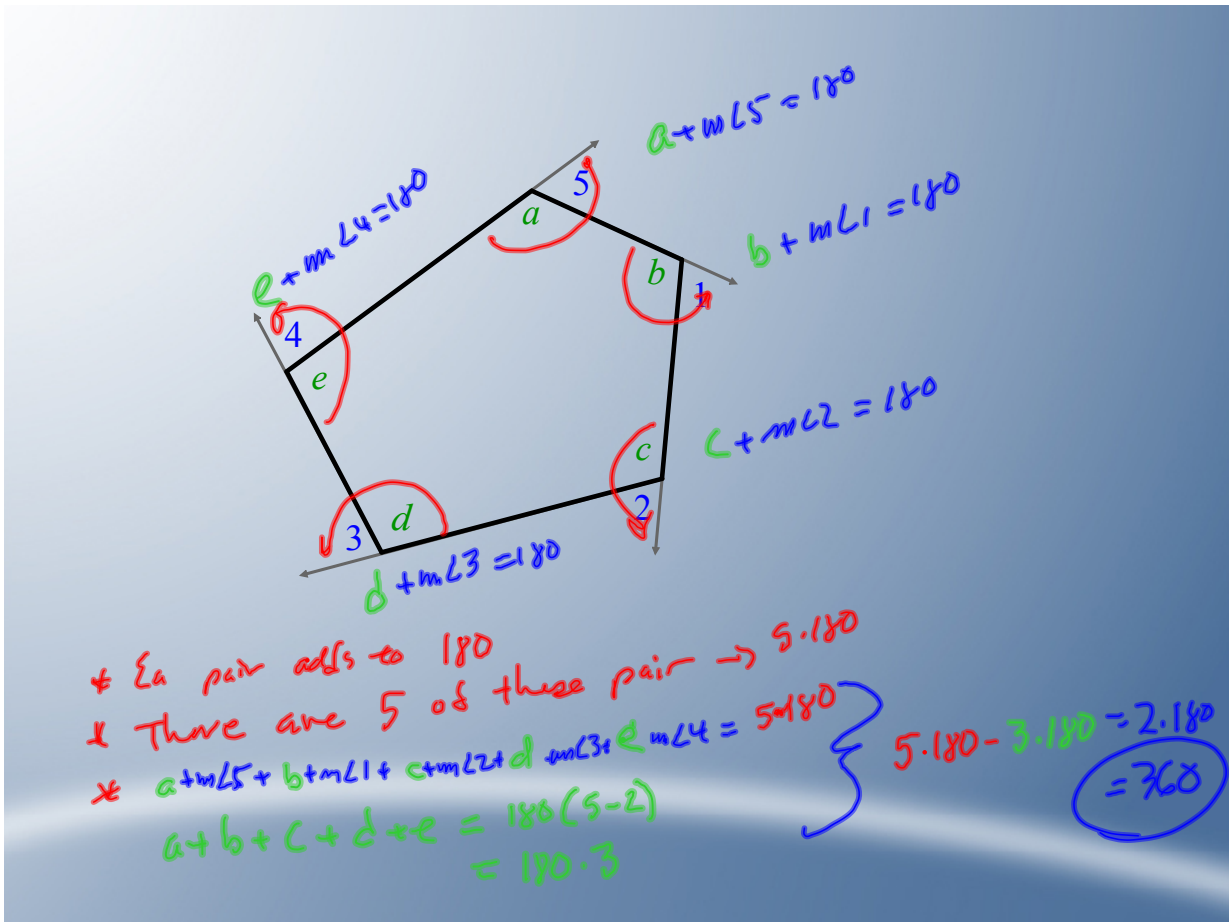


$$129 + 116 + 120 + 125 + 135 + 130 = 755$$

$$\begin{aligned}y + 755 &= 900 \\y &= 145\end{aligned}$$







Theorem 3-10 Polygon Exterior Angle-Sum Theorem

The sum of the measures of the ext \angle 's of any polygon, taken 1 at each vertex, is 360

$$m\angle 1 + m\angle 2 + m\angle 3 + \dots + m\angle n = 360$$

Special poly classifications

Equilateral polygon	all sides \cong
Equiangular polygon	all angles \cong
Regular polygon	both equilateral & equiangular

7 Pg 146 #24 part 1

Find the measure of an interior angle for a regular 18-gon.

$$n = 18$$

$$180(n-2) = 180(18-2) = 180 \cdot 16 = 2880^\circ$$

8 Pg 146 #24 part 2

Find the measure of an exterior angle for a regular 18-gon.

* 18-gon means 18 sides



18 angles

* it is regular so all \angle 's are \cong
including the ext \angle 's.

* if $x =$ measure of ea ext \angle

then $18 \cdot x = 360$

$$x = \frac{360}{18} = 20$$

L3.4 HW Assignment

Pg 147 #1-25 odd, 32-35, 37-44, 47-53, 59, 64-70

Pg 151 #1-9