Chapter 8
Review with Mr. H

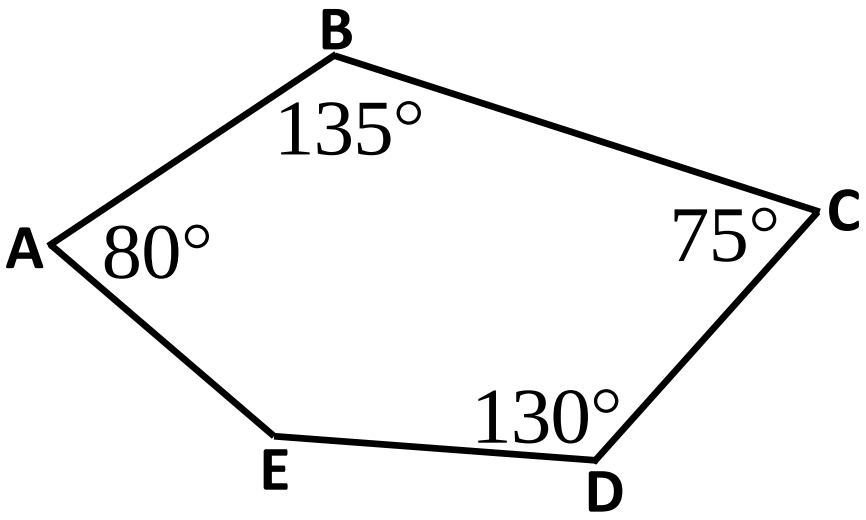
Materials Needed:

1. Pencil and paper
2. Calculator
3. Yellow Sheet

Directions:

Work out each problem shown. After a minute or two Mr. H will show how the problem is done step by step.

Find $m\angle AED$.



Big Idea:
Apply the sum of interior angles formula.

$$(n-2)\cdot 180$$

$$n = 5$$

$$(5-2)\cdot 180$$

$$3\cdot 180 = 540$$

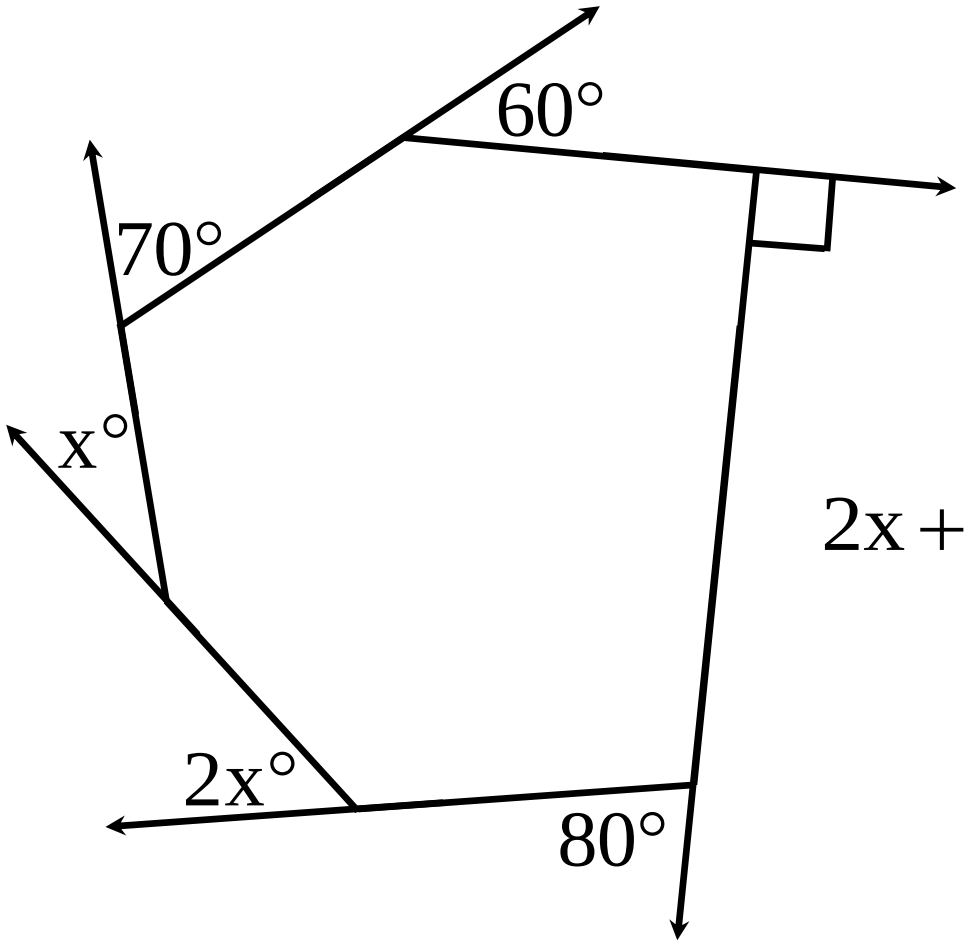
$$m\angle AED + 80 + 135 + 75 + 130 = 540$$

$$m\angle AED + 420 = 540$$

$$-420 \quad -420$$

$$\boxed{m\angle AED = 120}$$

Find the value of x.



Big Idea:
The sum of the exterior angles of any polygon is always 360°.

$$2x + x + 70 + 60 + 90 + 80 = 360$$

$$3x + 300 = 360$$

$$-300 \quad -300$$

$$\frac{3x}{3} = \frac{60}{3}$$

$$\boxed{x = 20}$$

What is the measure of each interior angle of a regular pentagon?

Big Idea:

Apply the measure of <u>each</u> interior angle formula.

$$\frac{(n-2)\cdot 180}{n} \qquad n = 5$$

$$\frac{(5-2)\cdot 180}{5} = \frac{3\cdot 180}{5} = 3\cdot 36 = \boxed{108^\circ}$$

What is the measure of each exterior angle of a regular pentagon?

Big Idea:
Apply the measure of <u>each</u>
exterior angle formula.

$$\frac{360}{n} \qquad n = 5$$

$$\frac{360}{5} = \boxed{72°}$$

The measure of each interior angle of a regular polygon is $135°$. What is the name of the polygon?

Big Idea:

Apply the measure of <u>each</u> interior angle formula.

$$n \cdot \frac{(n-2)\cdot 180}{n} = 135 \cdot n$$

$$(n-2)\cdot 180 = 135n$$

$$180n - 360 = 135n$$

$$-180n \qquad -180n$$

$$-360 = -45n$$

$$-45 \qquad -45$$

$$n = 8$$

Octagon

The measure of each exterior angle of a regular polygon is $72°$. What is the name of the polygon?

Big Idea:

Apply the measure of <u>each</u> exterior angle formula.

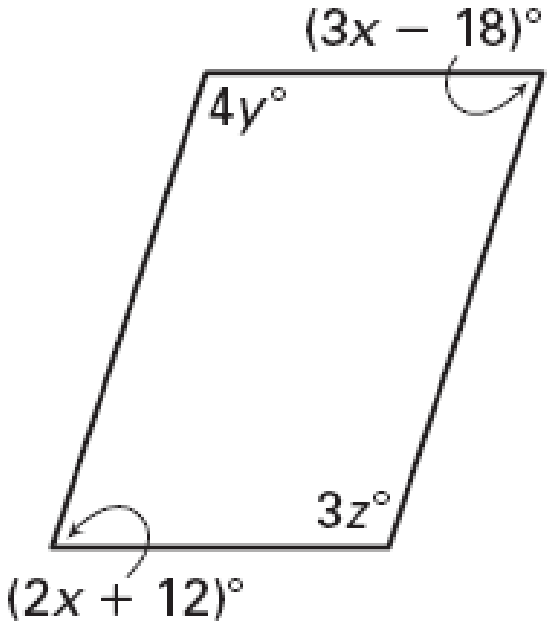
$$n \cdot \frac{360}{n} = 72 \cdot n$$

$$\frac{360}{72} = \frac{72n}{72}$$

$$n = 5$$

Pentagon

Find the value of the variables.



$$3x - 18 = 2x + 12$$

$$\boxed{x = 30}$$

$$4y + 3x - 18 = 180$$

$$4y + 3(30) - 18 = 180$$

$$\boxed{y = 27}$$

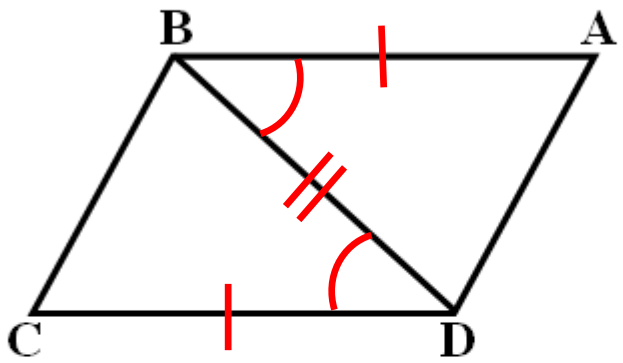
$$3z + 3x - 18 = 180$$

$$3z + 3(30) - 18 = 180$$

$$\boxed{z = 36}$$

Given: $\square ABCD$

Prove: $\Delta ABD \cong \Delta CDB$



Statement	Reason
1. $\square ABCD$	1. Given
2. $\overline{BA} \cong \overline{CD}$	2. a) Opp. sides of $\square \cong$
3. $\angle CDB \cong \angle ABD$	3. b) Alternate Interior Angles
4. $\overline{BD} \cong \overline{BD}$	4. c) Reflexive Property
5. $\Delta ABD \cong \Delta CDB$	5. d) SAS

Find the indicated measures of rhombus PQRS.

a) $m\angle QPR = 30°$

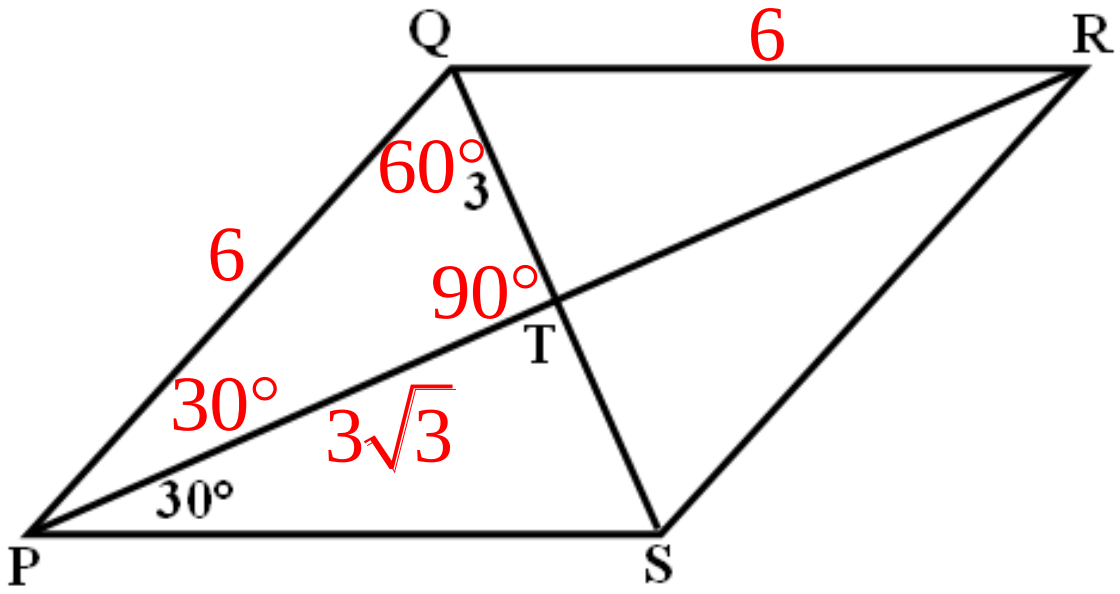
b) $m\angle QTP = 90°$

c) $m\angle TQP = 60°$

d) $TP = 3\sqrt{3}$

e) $QP = 6$

f) $QR = 6$



Find the indicated measures of rectangle WXYZ.

a) PX = 7

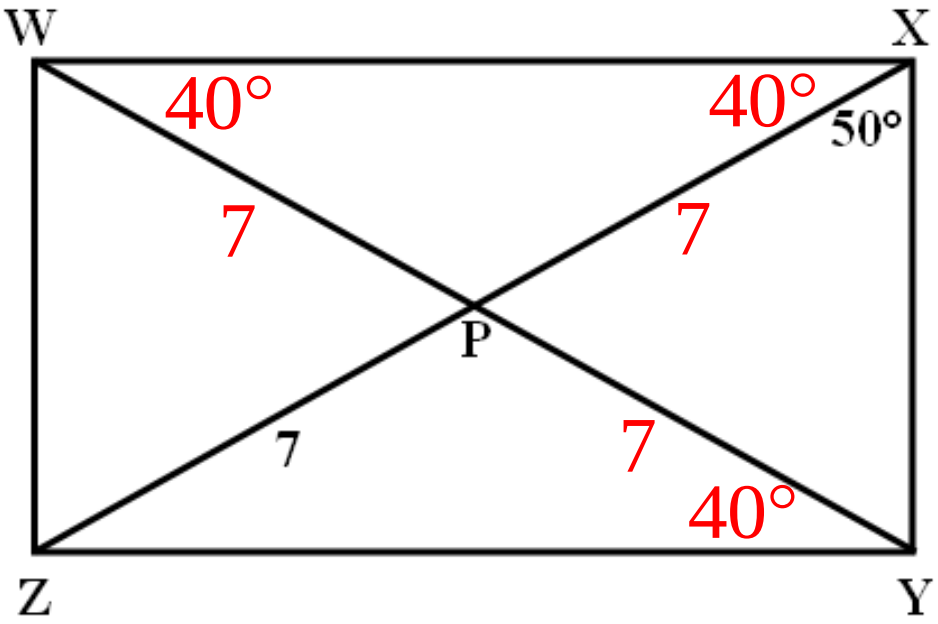
b) WP = 7

c) WY = 14

d) m∠WXP = 40°

e) m∠XWP = 40°

f) m∠ZYW = 40°



Find the indicated measures of square ABCD.

a) $m\angle CEB = 90°$

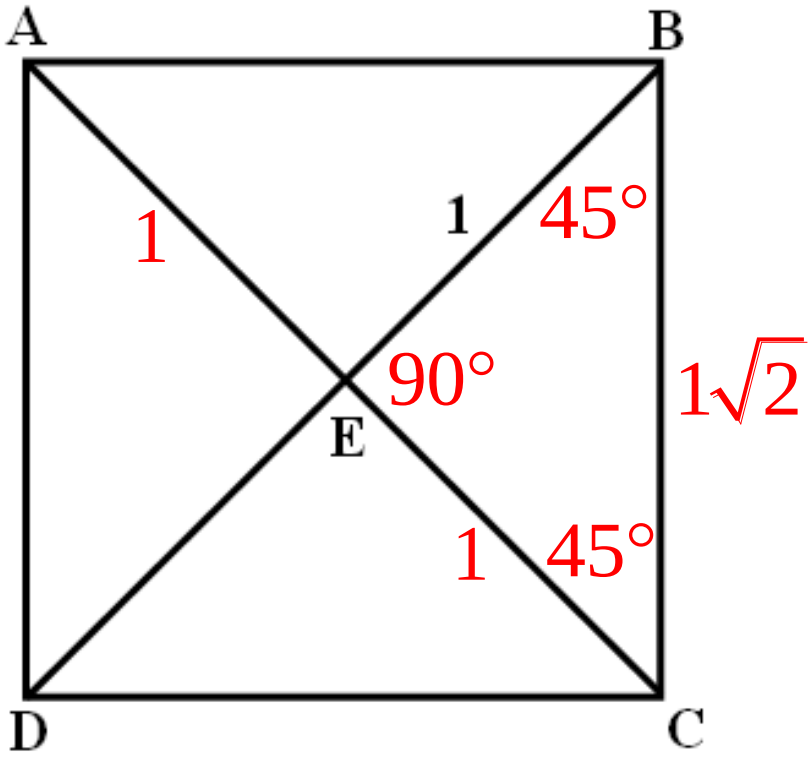
b) $EC = 1$

c) $m\angle EBC = 45°$

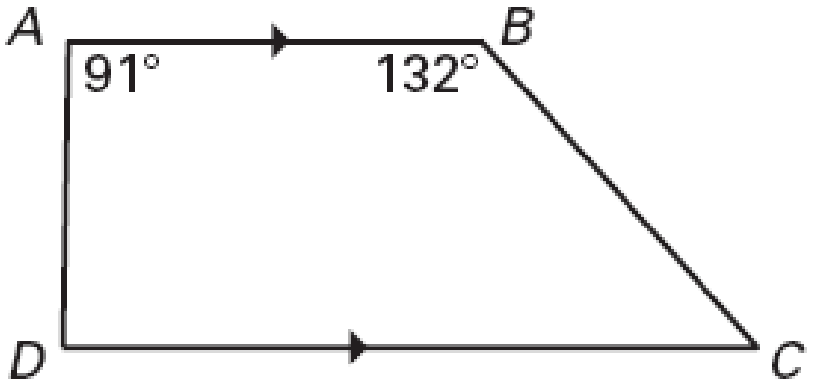
d) $m\angle ECB = 45°$

e) $AC = 2$

f) $BC = \sqrt{2}$



Find $m\angle D$ and $m\angle C$.



$$m\angle D + 91 = 180$$

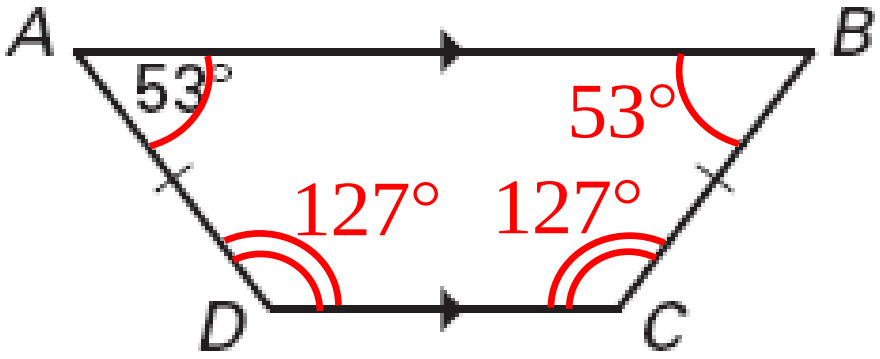
$$\boxed{m\angle D = 89^\circ}$$

$$m\angle C + 132 = 180$$

$$\boxed{m\angle C = 48^\circ}$$

Find $m\angle B$, $m\angle C$ and $m\angle D$.

Isosceles Trapezoid



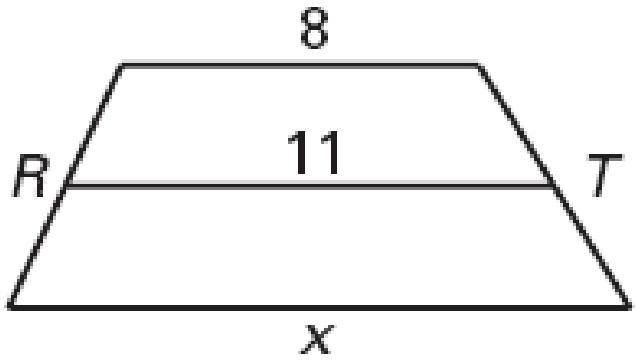
$\boxed{m\angle B = 53°}$

$m\angle C + 53 = 180$

$\boxed{m\angle C = 127°}$

$\boxed{m\angle D = 127°}$

Find the value of x.

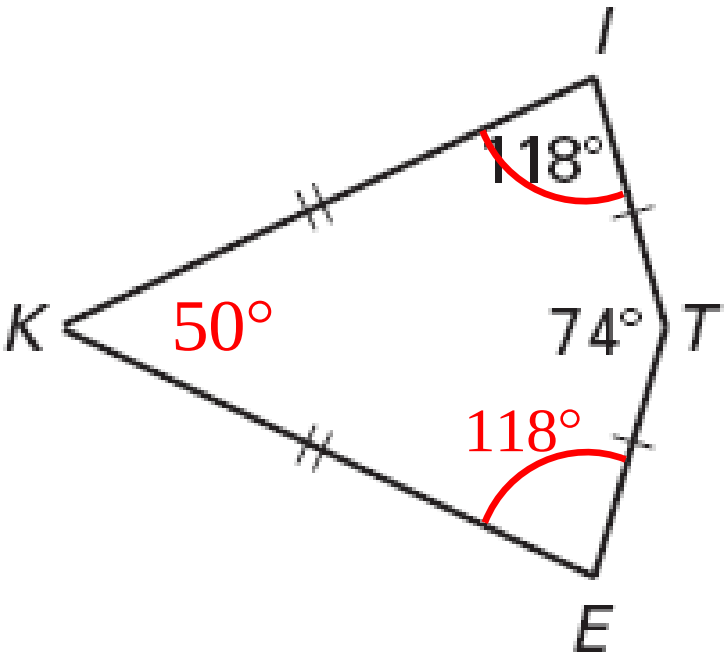


$$2 \cdot 11 = \frac{1}{2}(x+8) \cdot 2$$

$$22 = x + 8$$

$$\boxed{x = 14}$$

Find $m\angle E$ and $m\angle K$.

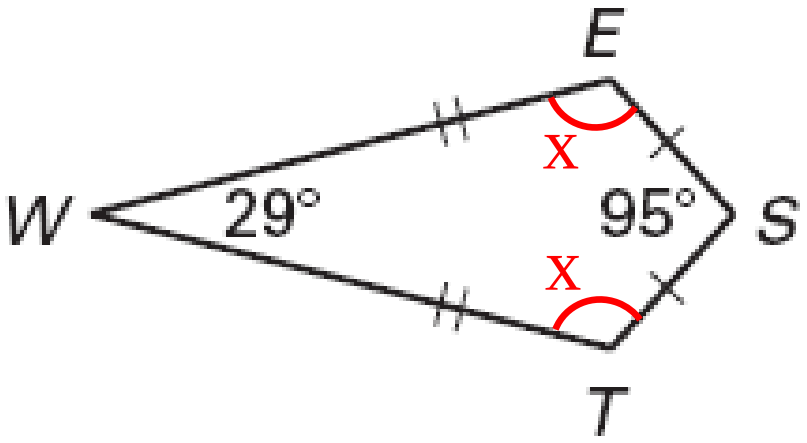


$$\boxed{m\angle E = 118^\circ}$$

$$m\angle K + 118 + 74 + 118 = 360$$

$$\boxed{m\angle K = 50^\circ}$$

Find $m\angle E$ and $m\angle T$.

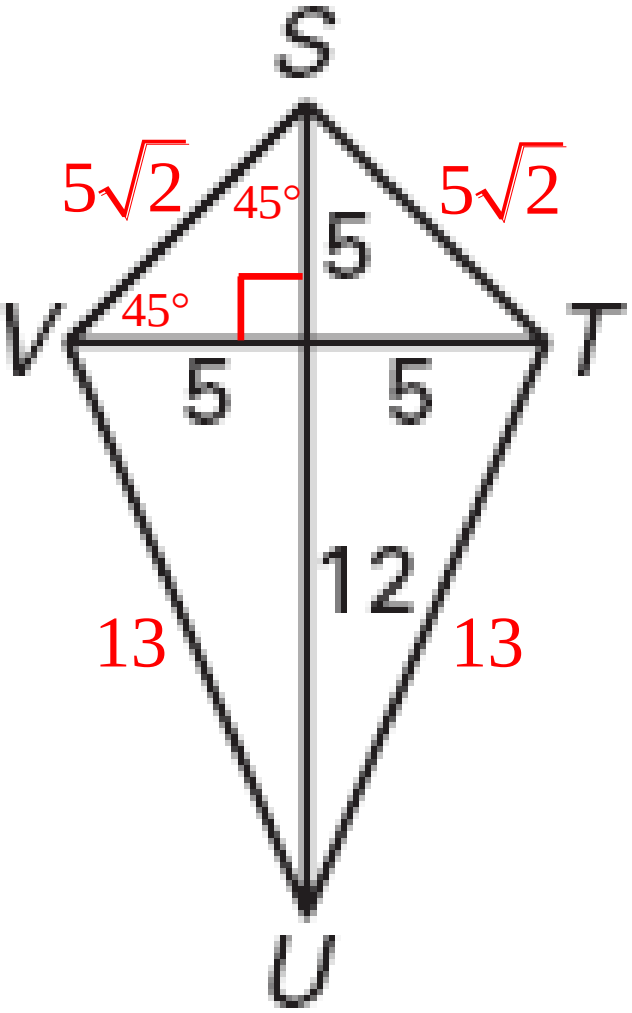


$$x + x + 29 + 95 = 360$$

$$x = 118$$

$$\boxed{\begin{array}{l} m\angle E = 118° \\ m\angle T = 118° \end{array}}$$

Find the missing side lengths.



Big Idea:

You could use Pythagorean Theorem, BUT applying the 45-45-90 triangle property and 5, 12, 13 Pythagorean Triple makes the problem much easier to solve.

The sum of the interior angles of a polygon is two times the sum of its exterior angles. What type of polygon is it?

Sum of Interior Angles

$(n-2)\cdot 180$

Sum of Exterior Angles

$360°$

Big Idea:

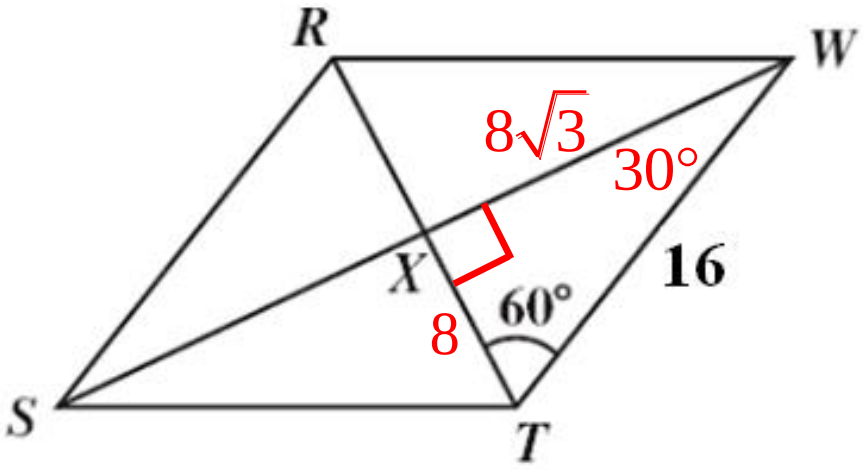
Apply the sum of interior angles formula.

$$(n-2)\cdot 180 = 2\cdot 360$$

$$(n-2)\cdot 180 = 720$$

$$n = 6 \quad \boxed{\text{Hexagon}}$$

If RSTW is a rhombus, what is the area of ΔWXT?



$$A_{\text{Triangle}} = \frac{bh}{2}$$

$$= \frac{8 \bullet 8\sqrt{3}}{2}$$

$$= \boxed{32\sqrt{3}}$$