Name: Alc My SGO is on: _____

SGO Chapters 1 - 8 Review

Congruent

What does congruent mean?

Equal. Congruent angles are the same measure. Congruent segments are the same length.

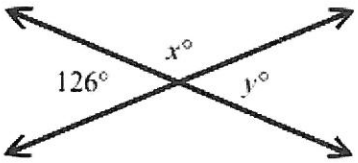
Complementary/Supplementary

Complementary Angles add up to 90°. Supplementary Angles add up to 180°.

Vertical Angles and Linear Pairs

Vertical angles are congruent. Linear Pairs are supplementary.

Find x and y.

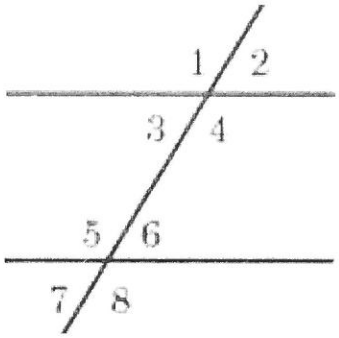


$y^\circ = 126^\circ$

$x^\circ = 54^\circ$

Alternate Interior, Alternate Exterior, Consecutive Interior and Corresponding Angles

List all pairs of each type of angle named aboverand denote whether they are congruent or supplementary when the two lines are parallel.



Alt. Interior: 3∢6, 4∢5 ≅

Alt exterior: 1∢8, 2∢7 ≅

Consecutive Interior: 3∢5, 4∢6 supplementary

Corresponding: 1∢5, 2∢6 ≅
3∢7, 4∢8

Translations, Rotations and Reflections

Do each transformation to the original figure:

a) Translate it using the rule (x, y) → (x - 5, y + 7)

b) Rotate it 90° counterclockwise

c) Reflect it over the ~~x~~ y axis

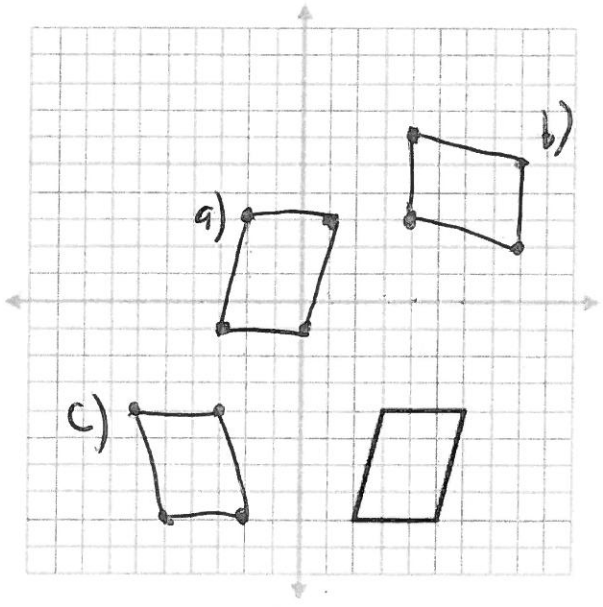
(a, 6) → (-6, a)

(3, -4) → (4, 3)

(6, -4) → (4, 6)

(2, -8) → (8, 2)

(5, -8) (8, 5)



Classifying Triangles

What are the three ways to classify a triangle by its sides and three ways to classify a triangle by its angles?

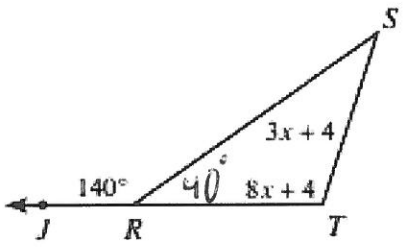
Scalene
Isosceles
Equilateral

Acute
Right
Obtuse

Triangle Sum Theorem

The sum of the interior angles of a triangle is 180°.

Find the measure of angle S.



$40^\circ + 3x+4^\circ + 8x+4^\circ = 180$

$\frac{11x}{11} = \frac{132}{11}$

$x = 12$

$m\angle S = 3(12)+4$

40°

Conditional Statements

The converse of If p, then q is If q, then p.

The inverse of It p, then q is If not p, then not q.

5 Properties of a Parallelogram

1.  opp sides $\cong$
2.  opp sides $\parallel$
3.  opp angles $\cong$
4.  $A + B = 180^\circ$ consecutive angles are supplementary
5.  diagonals bisect.

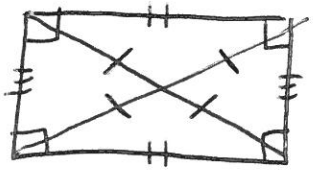
5 Ways to Prove a Quadrilateral is a Parallelogram

1. 
2. 
3. 
4. 
5. 

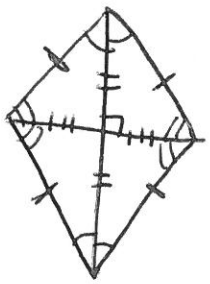
Rectangles, Rhombi and Squares

Construct each using proper markings to illustrate the properties.

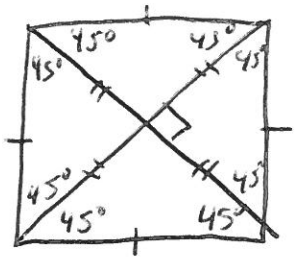
Rectangle



Rhombus



Square



Point Slope Form

The slope of line perpendicular to y = 3x + 5 is $-\frac{1}{3}$.

Sum of the Interior/Exterior Angles of a Polygon

The formula for the sum of the interior angles of any polygon with n sides is $(n-2)180^\circ$.

The sum of the exterior angles of a polygon with n sides is always 360°.

Regular Polygons

A regular polygon has equal sides and equal angles.

Find the sum of the interior angles of a regular decagon. Then find the measure of each interior and exterior angle of a regular decagon.

$(10-2)180$

$8(180)$

1440°

Sum of interior

$\frac{1440^\circ}{10} = 144^\circ$

one interior

$\frac{360^\circ}{10} = 36^\circ$

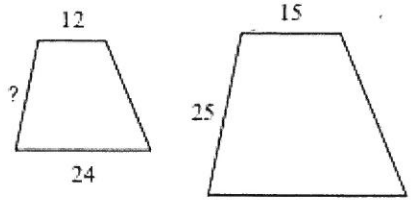
one exterior

Similar Polygons

If two polygons are similar, their sides are proportional and their angles are congruent.

Scale Factor

Find the missing side length given the trapezoids are similar.



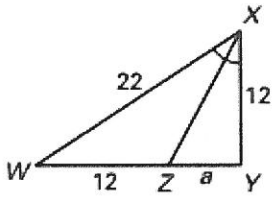
$\frac{5}{4}\frac{15}{12} = \frac{25}{x}$

$\frac{100}{5} = \frac{5x}{5}$

$x = 20$

Proportionality Theorems

Given XZ is an angle bisector, find the value of a.



$\frac{11}{6}\frac{22}{12} = \frac{12}{a}$ → $\frac{72}{11} = \frac{11a}{11}$

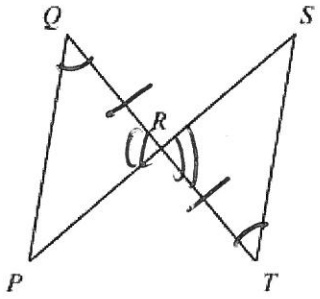
$\frac{72}{11}$

Extra Practice

1. Which reason completes the proof?

Given: $\angle Q \cong \angle T$ and $\overline{QR} \cong \overline{TR}$

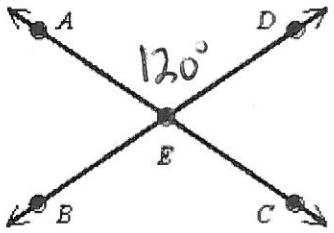
Prove: $\overline{PR} \cong \overline{SR}$



Statement	Reasons
1. $\angle Q \cong \angle T$ and $\overline{QR} \cong \overline{TR}$	1. Given
2. $\angle PRQ \cong \angle SRT$	2. Vertical angles are congruent.
3. $\Delta PRQ \cong \Delta SRT$	3. ___?___
4. $\overline{PR} \cong \overline{SR}$	4. ___?___

a. ASA; Substitution
b. SAS; CPCTC
c. AAS; CPCTC
d. ASA; CPCTC

2. In the figure shown, $m\angle AED = 120$. Which of the following statements is false?



Not drawn to scale

a. $m\angle AEB = 60$
b. $\angle BEC$ and $\angle CED$ are adjacent angles.
c. $m\angle BEC = 120$
d. $\angle AED$ and $\angle BEC$ are adjacent angles.