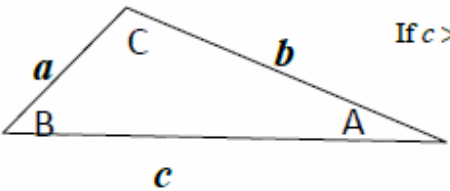
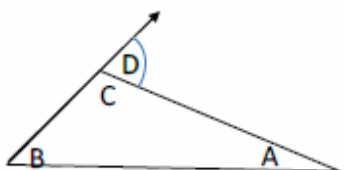
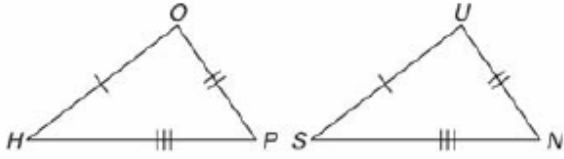
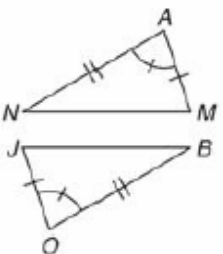
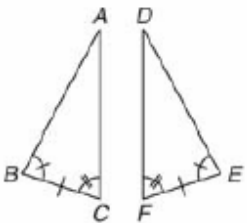
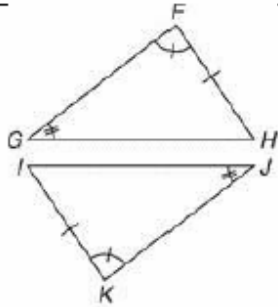
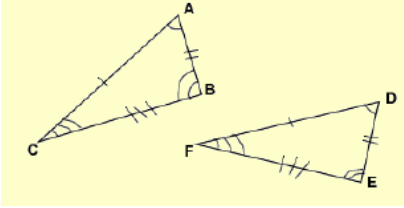
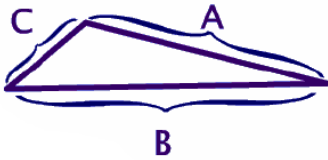
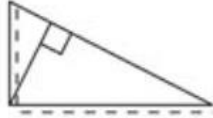
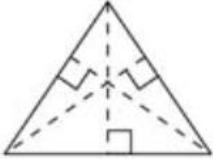
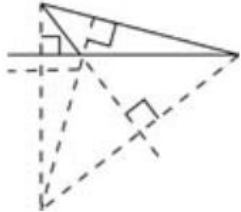
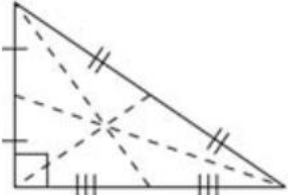
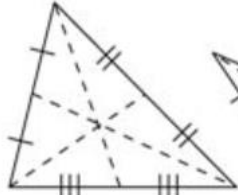
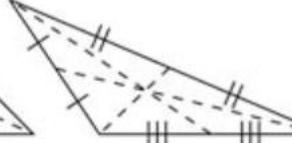
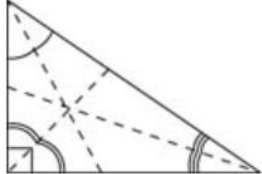
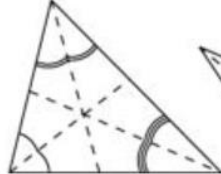

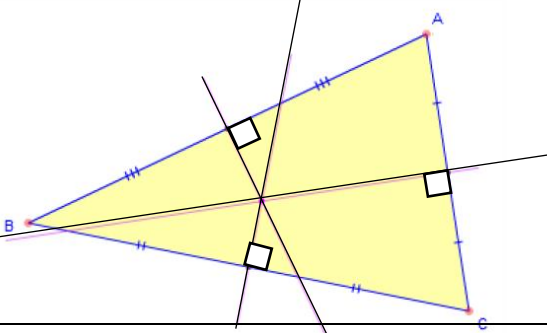


Chapter 3 Review

<p>Side-Angle Inequality Postulate In a triangle, if one side is longer than another side, then the angle opposite the longer side is larger than the angle opposite the shorter side. (Lesson 4.3)</p>	 <p style="text-align: right;">$\text{If } c > b > a, \text{ then } \angle C > \angle B > \angle A$</p>
<p>Triangle Exterior Angle Postulate The measure of an exterior angle of a triangle is equal to the sum of the measures of the remote interior angles. (Lesson 4.3)</p>	 <p style="text-align: right;">$m\angle D = m\angle B + m\angle A$</p>
<p>SSS Congruence Postulate If the three sides of one triangle are congruent to the three sides of another triangle, then the triangles are congruent. (Lesson 4.4)</p>	 <p style="text-align: center;">$\triangle HOP \cong \triangle SUN$ by SSS</p>
<p>SAS Congruence Postulate If two sides and the included angle of one triangle are congruent to two sides and the included angle of another triangle, then the triangles are congruent. (Lesson 4.4)</p>	 <p style="text-align: center;">$\triangle MAN \cong \triangle JOB$ by SAS</p>
<p>ASA Congruence Postulate If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, then the triangles are congruent. (Lesson 4.5)</p>	 <p style="text-align: center;">$\triangle ABC \cong \triangle DEF$ by ASA</p>
<p>AAS Congruence Postulate If two angles and a non-included side of one triangle are congruent to the corresponding angles and side of another triangle, then the triangles are congruent. (Lesson 4.5)</p>	 <p style="text-align: center;">$\triangle FGH \cong \triangle KJI$ by AAS</p>

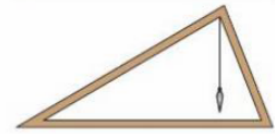
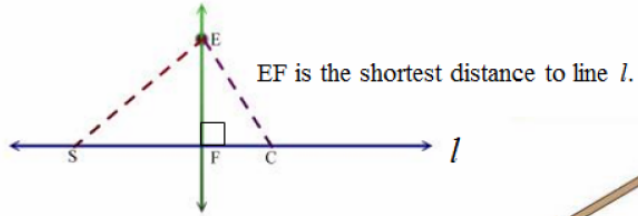
Chapter 3 Review

<p>Congruent Parts of Congruent Triangles are Congruent (CPCTC)</p>		<p>$\triangle ABC \cong \triangle DEF$ implies :</p> <ul style="list-style-type: none"> $\angle CAB \cong \angle FDE$ $\angle ABC \cong \angle DEF$ $\angle ACB \cong \angle DFE$ $\overline{AC} \cong \overline{DF}$ $\overline{AB} \cong \overline{DE}$ $\overline{BC} \cong \overline{EF}$
<p>Triangle Inequality Theorem Any side of a triangle has a length that is less than the sum of other two sides and greater than difference of the other two sides.</p>		$ A - B < C < A + B$ $ B - C < A < B + C$ $ A - C < B < A + C$
<p>Altitude Definition: Every altitude is the perpendicular segment from a vertex to its opposite side</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>right triangle (lines meet at the vertex of the right angle)</p>  </div> <div style="text-align: center;"> <p>acute triangle (lines meet inside the triangle)</p>  </div> <div style="text-align: center;"> <p>obtuse triangle (lines meet outside the triangle)</p>  </div> </div>	
<p>Median Definition: A median in a triangle is the line segment drawn from a vertex to the midpoint of its opposite side.</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>right triangle</p>  </div> <div style="text-align: center;"> <p>acute triangle</p>  </div> <div style="text-align: center;"> <p>obtuse triangle</p>  </div> </div>	
<p>Angle Bisector Definition: An angle bisector in a triangle is a segment drawn from a vertex that bisects (cuts in half) that vertex angle.</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>right triangle</p>  </div> <div style="text-align: center;"> <p>acute triangle</p>  </div> <div style="text-align: center;"> <p>obtuse triangle</p>  </div> </div>	
<p>Perpendicular Bisector Definition: A perpendicular bisector in a triangle is a segment drawn from a midpoint of a side that is perpendicular to that side.</p>		

Chapter 3 Review

Shortest Distance to a Line Corollary

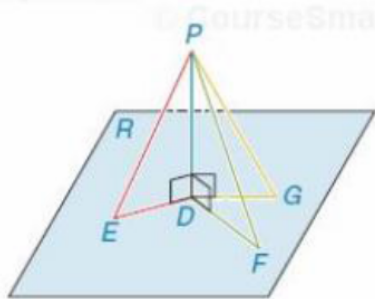
The shortest distance from a point to a line is measured along the perpendicular segment from the point to the line. (Lesson 3.3)



A carpenter's "plumb" determines the shortest distance to a horizontal line. A vertical brace provides structural support for the roof.

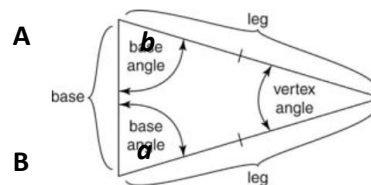
Shortest Distance to a Plane Corollary

The shortest distance from a point to a plane is the shortest line segment that can be drawn from the point to the plane.



Isosceles Triangle Definition:

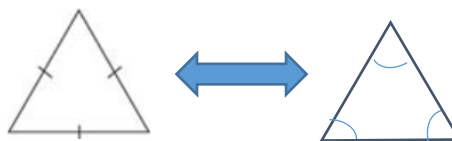
An isosceles triangle is a triangle with two congruent sides (called the legs).
Theorem: If a triangle has two congruent sides, then the opposite angles to those congruent sides are also congruent (called base angles).
The converse is also true.



$$a = b \Leftrightarrow \angle A \cong \angle B$$

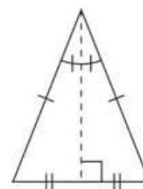
Equilateral Triangle Definition:

An equilateral triangle is a triangle with all three sides being congruent.
Theorem: If a triangle is equilateral, then it is also equiangular. The converse is also true.



Isosceles Triangle Theorem

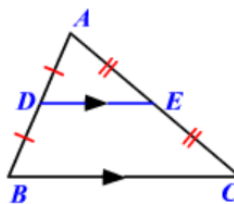
In an isosceles triangle, the bisector of the vertex angle is also the altitude, median, and perpendicular bisector to the base.



Chapter 3 Review

The Triangle Midsegment Theorem

A midsegment connecting two sides of a triangle is parallel to the third side and is half as long.

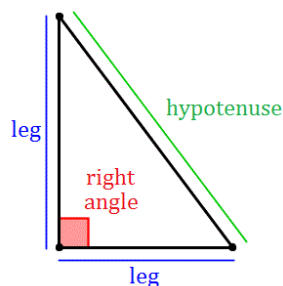


If $AD = DB$ and $AE = EC$,

then $\overline{DE} \parallel \overline{BC}$ and $DE = \frac{1}{2}BC$.

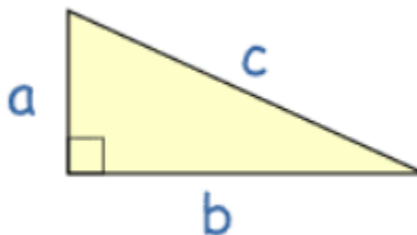
Right Triangles and The Pythagorean Theorem

A **right triangle** is a triangle with one angle having a measure of 90 degrees. The longest side of a right triangle is called the hypotenuse, and the other two sides are called the legs.



The Pythagorean Theorem:

In a right angled triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.



$$a^2 + b^2 = c^2$$

$$c = \sqrt{a^2 + b^2}$$

$$b = \sqrt{c^2 - a^2}$$

$$a = \sqrt{c^2 - b^2}$$