مدارس البكالوريا
BACCALAUREATE SCHOOLS

Name: _____

Date: _____

Grade 9

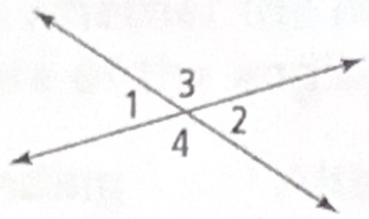
7-1 Reteach to Build Understanding

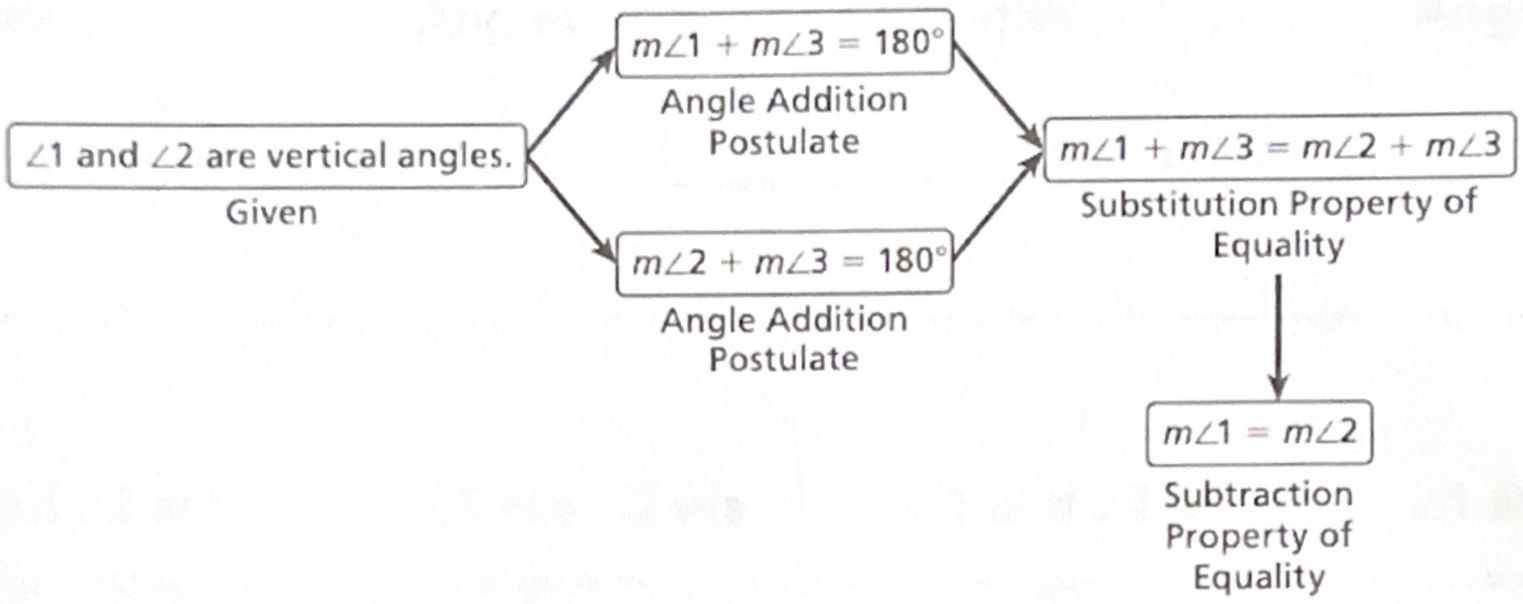
Writing Proofs

1. Complete the two-column proof below.

Given: $\angle 1$ and $\angle 2$ are vertical angles.

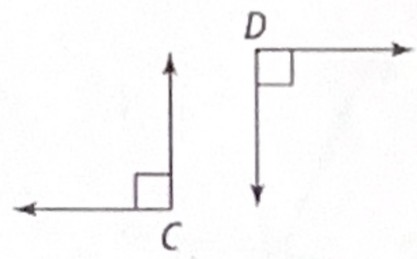
Prove: $\angle 1 \cong \angle 2$





Statements	Reasons
1) $\angle 1$ and $\angle 2$ are vertical angles	1) Given
2) $m\angle 1 + m\angle 3 = 180°$ and $m\angle 2 + m\angle 3 = 180°$	2) Angle addition postulate
3) $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 3$	3) substitution property of equality
4) $m\angle 1 = m\angle 2$	4) subtraction property of equality
5) $\angle 1 \cong \angle 2$	5) Definition of congruent angles

2. Write a two-column proof of the Right Angle Congruence Theorem. Use the definition of a right angle and write the measure of each angle. Next use the Substitution Property of Equality, and finally the definition of congruent angles.



Given: $\angle C$ and $\angle D$ are right angles.

Prove: $\angle C \cong \angle D$

Statements	Reasons
1) $\angle 1$ and $\angle 2$ are right angles	1) Given
2) $m\angle C = 90°$ and $m\angle D = 90°$	2) Definition of a right angle
3) $m\angle C = m\angle D$	3) substitution property of equality
4) $\angle C \cong \angle D$	4) Definition of congruent angles

مدارس البكالوريا
BACCALAUREATE SCHOOLS

Name: _____

Date: _____

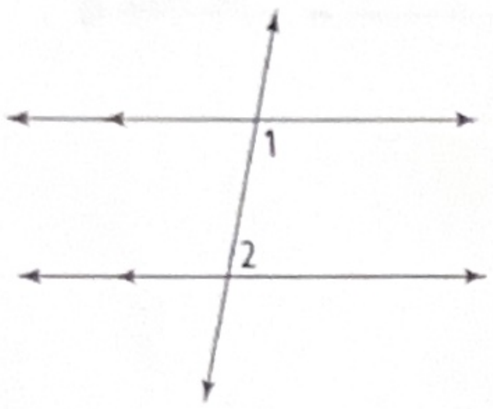
Grade 9

7-2 Reteach to Build Understanding

Parallel Lines

1. Use the diagrams to fill in the blanks. Determine whether the pair of angles are congruent or supplementary and find the measure of the angle.

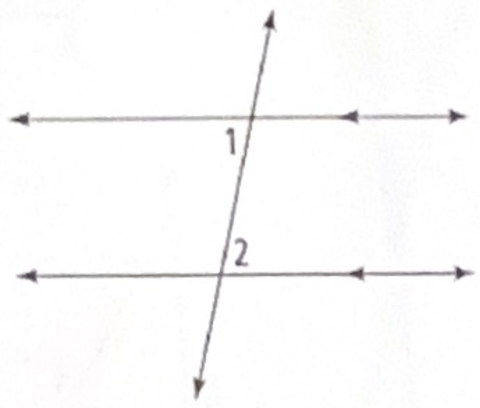
Same-Side Interior Angles



∠1 and ∠2 are supplementary.

If $m\angle 1 = 100°$, then $m\angle 2 =$ 80°.

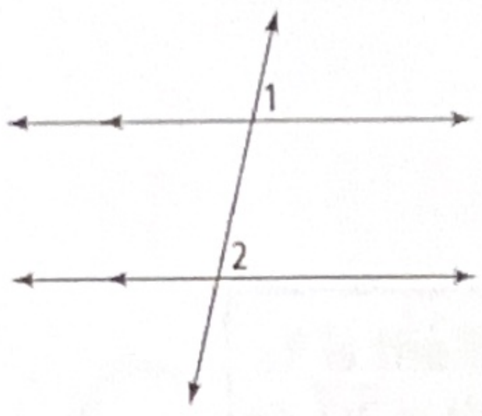
Alternate Interior Angles



∠1 and ∠2 are congruent.

If $m\angle 1 = 75°$, then $m\angle 2 =$ 75°.

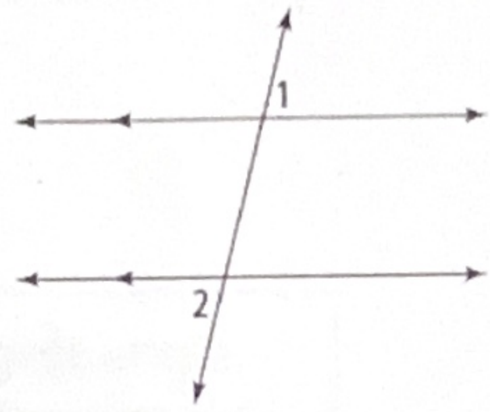
Corresponding Angles



∠1 and ∠2 are congruent.

If $m\angle 1 = 82°$, then $m\angle 2 =$ 82°.

Alternate Exterior Angles



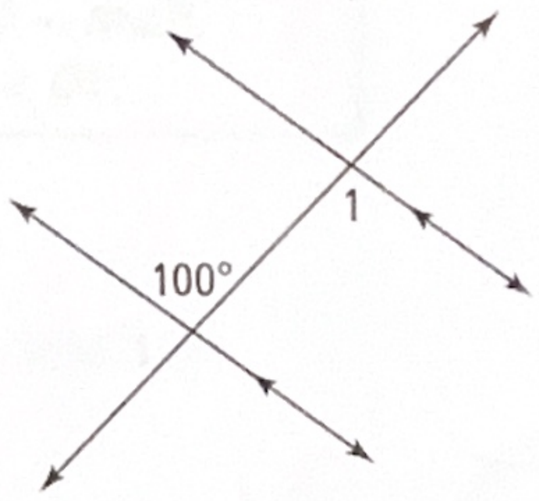
∠1 and ∠2 are congruent.

If $m\angle 1 = 77°$, then $m\angle 2 =$ _____.

2. A student said that $m\angle 1 = 80°$. What error did the student likely make? What is $m\angle 1$?

Confused same side interior angles and alternate interior angles, because they are both interior

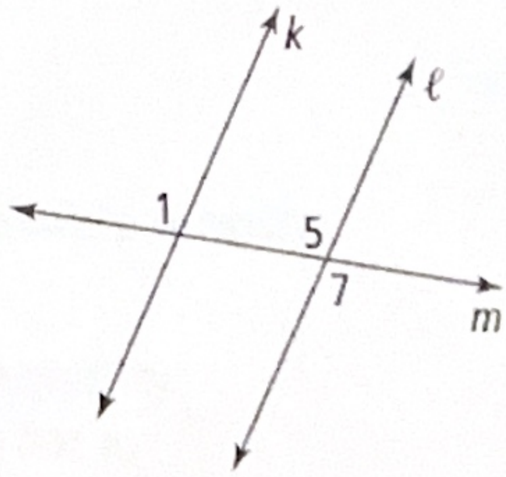
$m\angle 1 = 100°$



3. Complete the two-column proof to prove the Alternate Exterior Angles Theorem.

Given: $k \parallel \ell$

Prove: $\angle 1 \cong \angle 7$



Statements	Reasons
1) $k \parallel \ell$	1) Given
2) $\angle 1 \cong \angle 5$	2) corresponding angles theorem
3) $\angle 5 \cong \angle 7$	3) Vertical Angles Theorem
4) $\angle 1 \cong \angle 7$	4) Transitive Property of Congruence

Name: _____

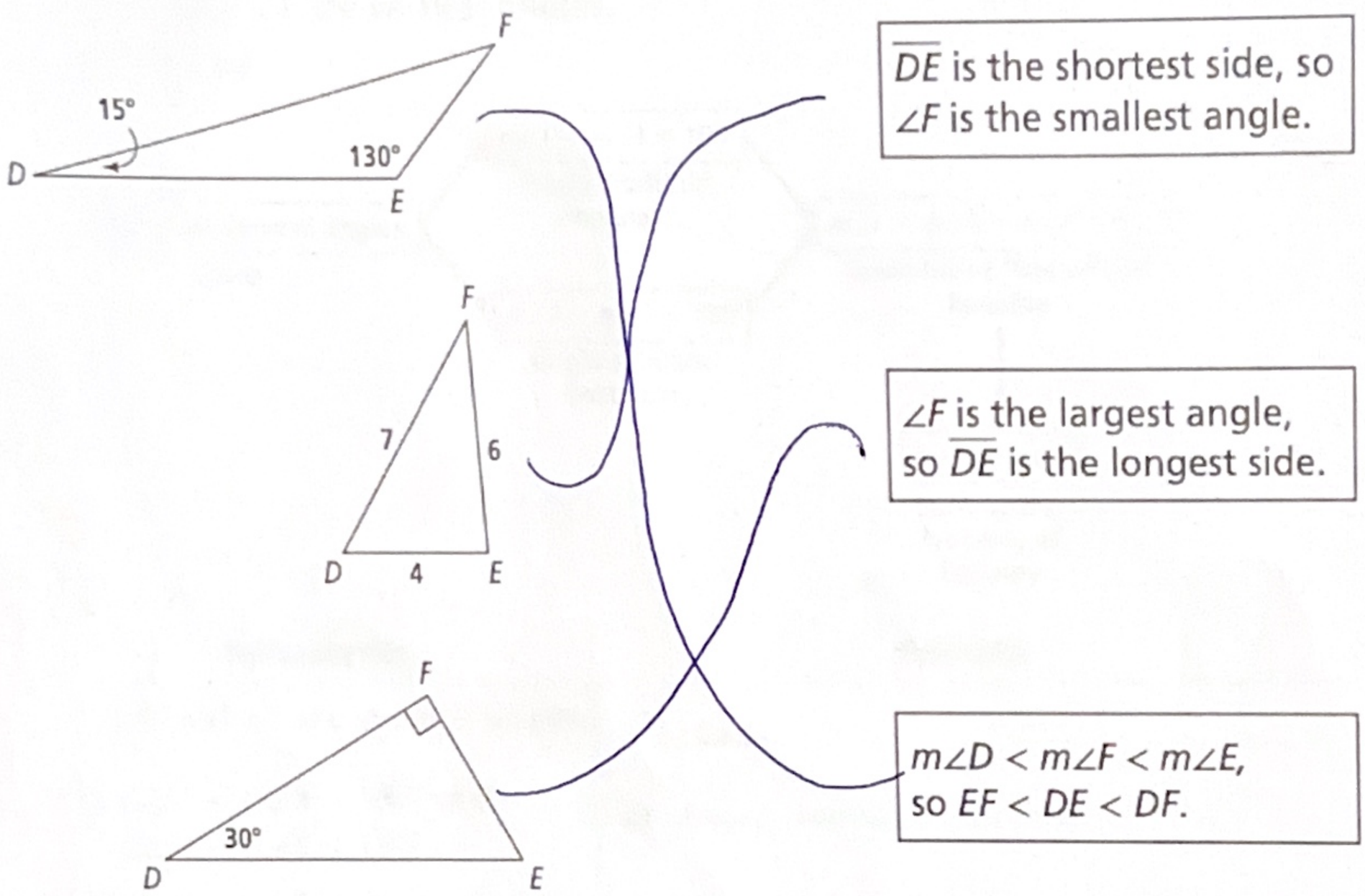
Date: _____

Grade 9

-6 Reteach to Build Understanding

Inequalities in One Triangle

1. Match each triangle on the left with the correct statement on the right.



$\overline{DE}$ is the shortest side, so $\angle F$ is the smallest angle.

$\angle F$ is the largest angle, so $\overline{DE}$ is the longest side.

$m\angle D < m\angle F < m\angle E$, so $EF < DE < DF$.

2. Zachary says a triangle can have sides with lengths 11 in., 7 in., and 3 in. because $3 + 11 > 7$ and $7 + 11 > 3$. Explain Zachary's error.

$3+7 \not> 11$, so the lengths cannot form a triangle

3. Two sides of a triangle are 11 ft and 12 ft long. What are the possible lengths of the third side of the triangle?

Let x represent the length of the third side. Use the Triangle Inequality Theorem to write three inequalities. Then solve each inequality for x.

$x + 11 > 12$ $\quad x + 12 >$ 11 $\quad$ 11 + 12 > x

$x > 1$ $\quad x >$ -1 $\quad$ 23 > x

The side length can be any value between 1 ft and 23 ft long.