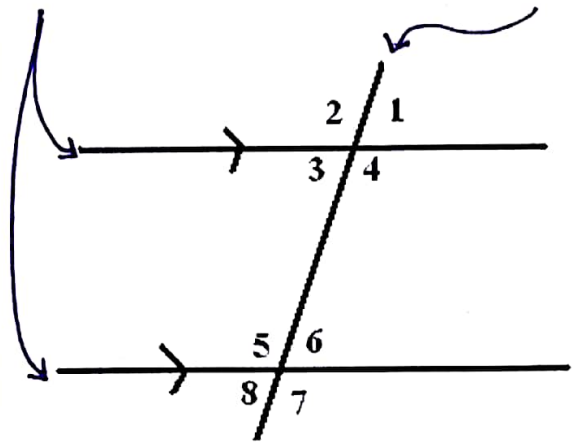


December 13

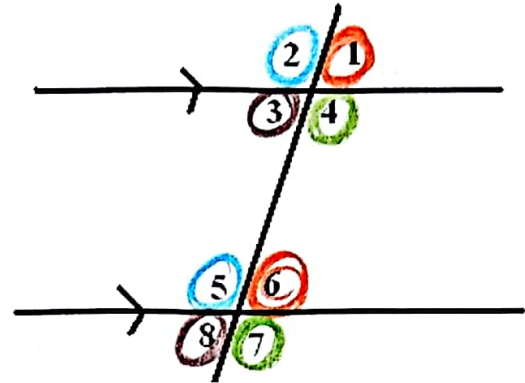
GUIDED NOTES: Parallel Lines and Transversals

Parallel Lines

Transversal

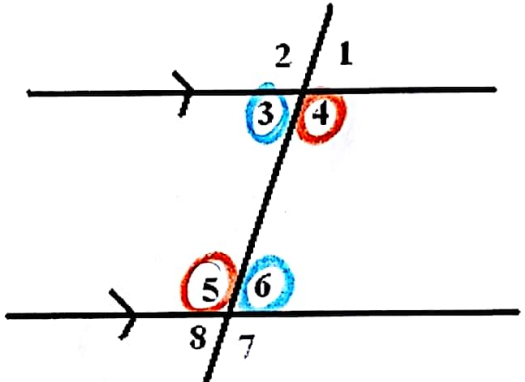


Corresponding Angles - angles in the same position on different parallel lines



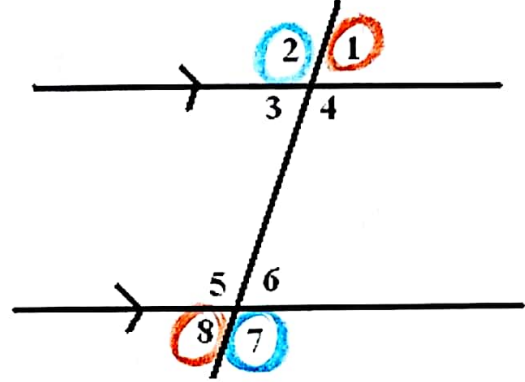
congruent (equal)

Alternate Interior Angles - angles between the parallel lines and on different sides of the transversal



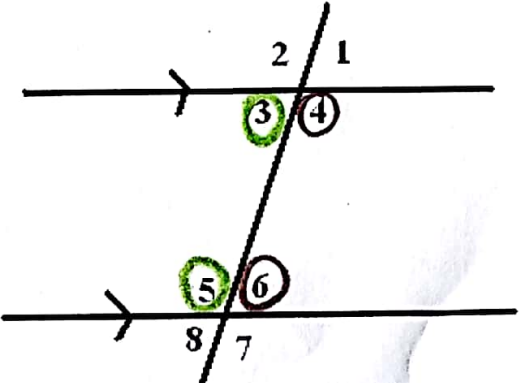
congruent (equal)

Alternate Exterior Angles - angles outside the parallel lines and on different sides of the transversal



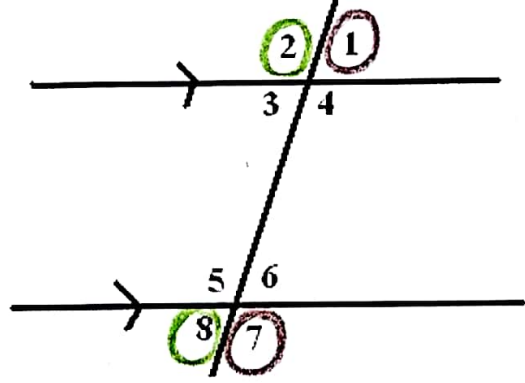
congruent (equal)

Same-Side Interior Angles - angles between the parallel lines and on the same side of the transversal



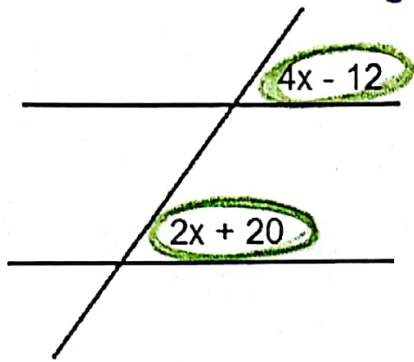
Supplementary (add up to 180°)

Same-Side Exterior Angles - angles outside the parallel lines and on the same side of the transversal



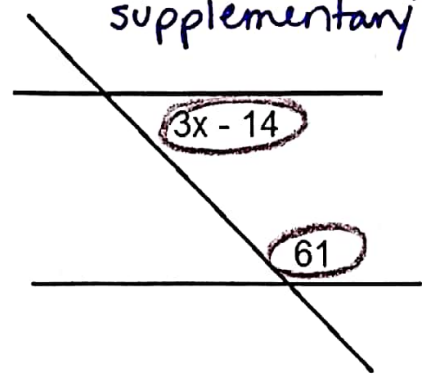
Supplementary (add up to 180°)

EX1. corresponding, congruent



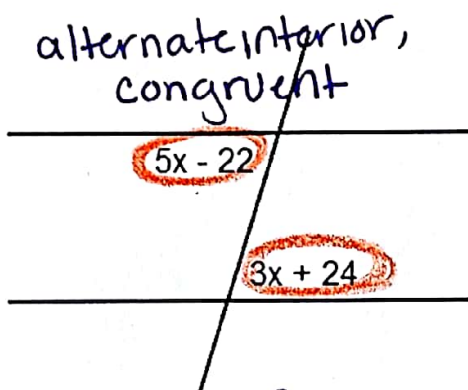
$$\begin{array}{r}
 4x - 12 = 2x + 20 \\
 -2x \quad -2x \\
 \hline
 2x - 12 = 20 \\
 +12 \quad +12 \\
 \hline
 2x = 32 \\
 \frac{2x}{2} = \frac{32}{2} \\
 \boxed{x = 16}
 \end{array}$$

EX2. same-side interior, supplementary



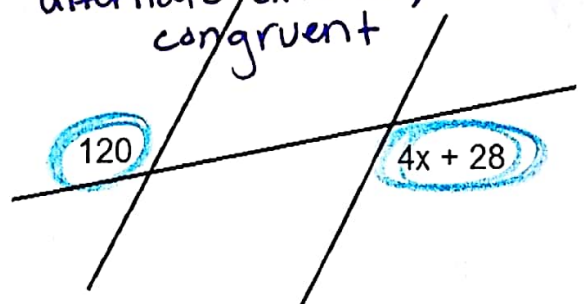
$$\begin{array}{r}
 3x - 14 + 61 = 180 \\
 \hline
 3x + 47 = 180 \\
 -47 \quad -47 \\
 \hline
 3x = 133 \\
 \frac{3x}{3} = \frac{133}{3} \\
 \boxed{x = 44.33}
 \end{array}$$

EX3. alternate interior, congruent



$$\begin{array}{r}
 5x - 22 = 3x + 24 \\
 -3x \quad -3x \\
 \hline
 2x - 22 = 24 \\
 +22 \quad +22 \\
 \hline
 2x = 46 \\
 \frac{2x}{2} = \frac{46}{2} \\
 \boxed{x = 23}
 \end{array}$$

EX4. alternate exterior, congruent

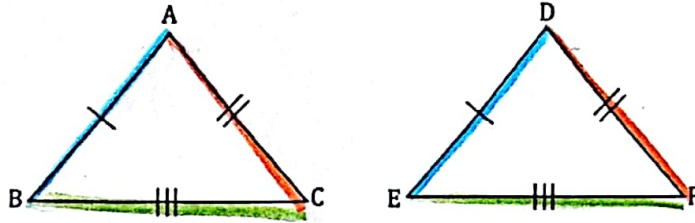


$$\begin{array}{r}
 120 = 4x + 28 \\
 -28 \quad -28 \\
 \hline
 92 = 4x \\
 \frac{92}{4} = \frac{4x}{4} \\
 \boxed{23 = x}
 \end{array}$$

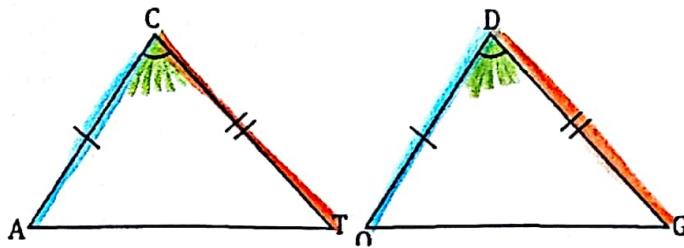
GUIDED NOTES: Triangle Congruence Theorems

The triangle congruence theorems are ways to prove that triangles are congruent by using information about some of their pieces.

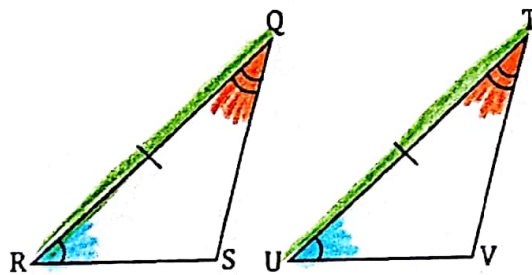
Side, Side, Side (SSS) – all three sides of one triangle are congruent to all three sides of the other triangle



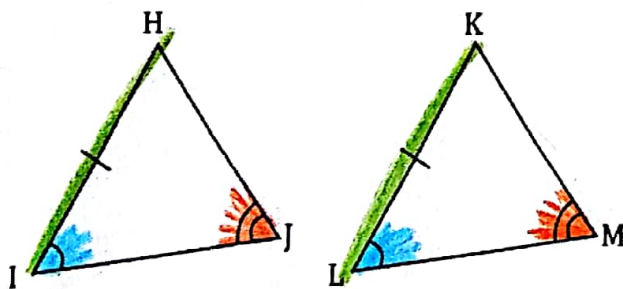
Side, Angle, Side (SAS) – two sides and the angle between them of one triangle are congruent to two sides and the angle between them of the other triangle



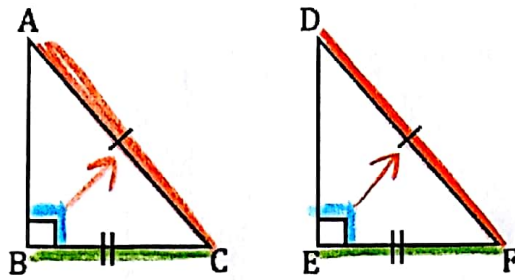
Angle, Side, Angle (ASA) – two angles and the side between them of one triangle are congruent to two angles and the side between them of the other triangle



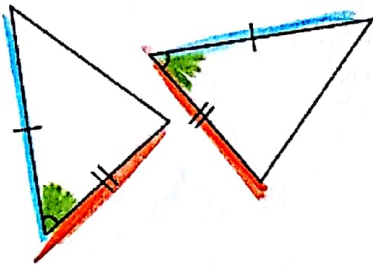
Angle, Angle, Side (AAS) – two angles and a side not between them of one triangle are congruent to two angles and a side not between them of the other triangle



Hypotenuse, Leg (HL) – the hypotenuse and a leg of one right triangle are congruent to the hypotenuse and a leg of the other right triangle

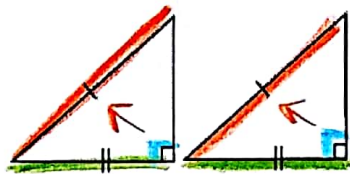


EX1



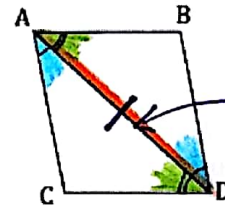
SAS

EX2



HL

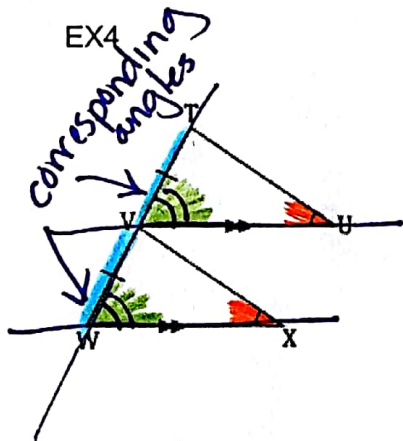
EX3



Reflexive Property
(congruent to itself, the triangles share it)

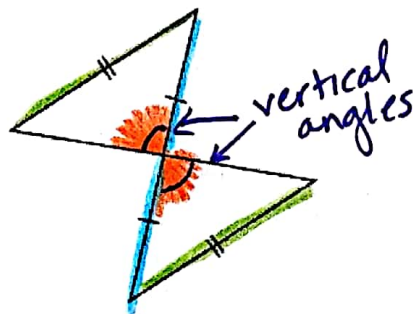
ASA

EX4



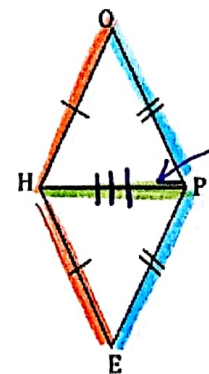
AAS

EX5



not possible to prove

EX6



Reflexive Property

SSS