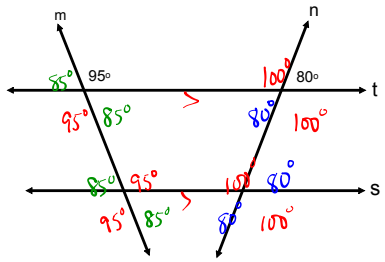
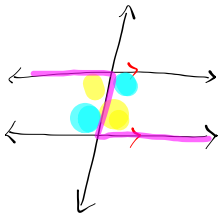
WARM-UP



Line t is parallel to line s

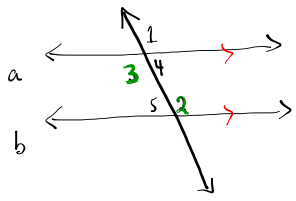
§2.2 Angles formed by Parallel Lines

Alternate Interior Angles - two non-adjacent interior angles on opposite sides of a transversal



(p75)

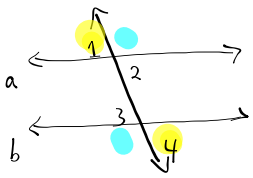
Example 1 - Prove that when a transversal intersects a pair of parallel lines, the alternate interior angles are equal



Statement	Justification
$a \parallel b$	given
$\angle 1 = \angle 2$	corresponding angles
$\angle 1 = \angle 3$	vertically opposite.
$\angle 3 = \angle 2$	transitive property

If is proven that $\angle 3 = \angle 2$ and that alternate interior angles are equal.

What about alternate exterior angles?

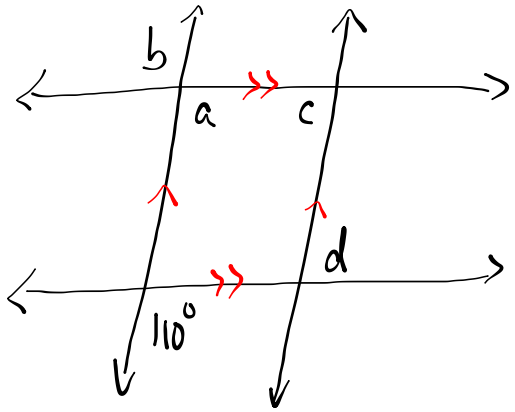


Statement	Justification.
$a \parallel b$	given
$\angle 1 = \angle 2$	vertically opposite.
$\angle 4 = \angle 2$	corresponding angles
$\angle 1 = \angle 4$	transitive. property

Proven: Alternate exterior angles

Example 2 (p76)

Find a, b, c and d



$a = 110^\circ$ (corresponding angles)

$b = 110^\circ$ (vatically) opp or (alternate exterior)

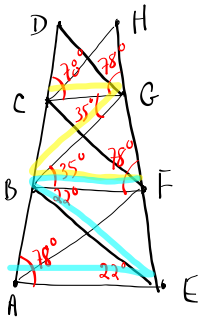
$c = 70^\circ$ ($a + c = 180^\circ$ (interior angles, supplementary))

$d = 70^\circ$ (alternate interior)

* Interior angles on same side of transversal are supplementary
* Exterior angles on same side of transversal are supplementary.

Example 3 (p77)

One side of a cellphone tower will be built as shown.
Prove that the braces CG, BF and AE are parallel.

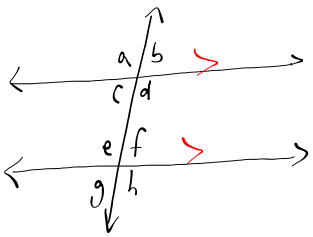


Prove: AE || BF || CG

Statement	Justification
$\measuredangle CGB = 35°$ $\measuredangle FBG = 35°$	} given
$CG \parallel BF$	alternate interior angles
$\measuredangle EBF = 22°$ $\measuredangle AEB = 22°$	} given
$AE \parallel BF$	alternate interior angles
$AE \parallel CG$	transitive property

All three braces are parallel to each other.

Summary



corresponding angles: $a = e$, $b = f$, $c = g$, $d = h$

alternate interior angles: $c = f$ and $d = e$

alternate exterior angles: $a = h$ and $b = g$

interior angles on same side of transversal: $c + e = 180°$, $d + f = 180°$ Supplementary

exterior angles on same side of transversal: $a + g = 180°$, $b + h = 180°$ } Supplementary

TO DO

① C4u (p78)

② p79 | 3, 4, 7-12