4.2 Transversals and Parallel Lines

Essential Question: How can you prove and use theorems about angles formed by transversals that intersect parallel lines?

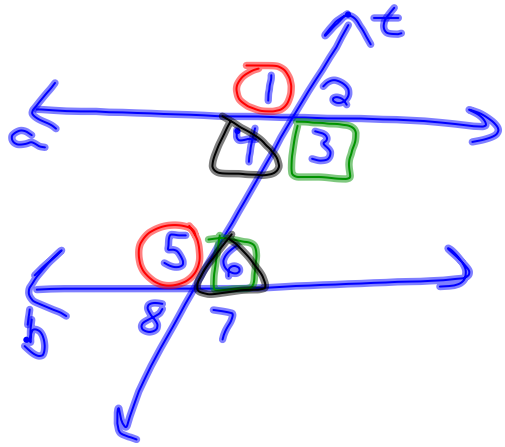
Transversal- a line that intersects two coplanar lines at two different points

Corresponding angles- lie on the same side of the transversal and on the same sides of the intersected lines

Same-side interior angles- lie on the same side of the transversal and between the intersected lines

Alternate interior angles- nonadjacent angles that lie on opposite sides of the transversal between the intersected lines

What does it look like?



Corresponding: ∠1 ≅ ∠5
∠2 ≅ ∠6
∠3 ≅ ∠7
∠4 ≅ ∠8

Same Side Int: ∠3 ≅ ∠6
∠4 ≅ ∠5

Alt. Int: ∠4 ≅ ∠6
∠3 ≅ ∠5

Alternate Interior
Corresponding
} 3 angles have the same measure

Same-side interior - angles are supplementary

only true when the intersected lines are parallel

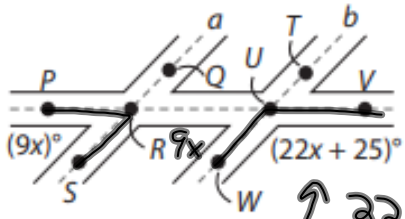
Lines a and b are parallel. find the measure of <WUV

$9x + 22x + 25 = 180$

$31x + 25 = 180$

$-25 \quad -25$

$\frac{31x}{31} = \frac{155}{31}$ $x = 5$



$22(5) + 25$

$135°$

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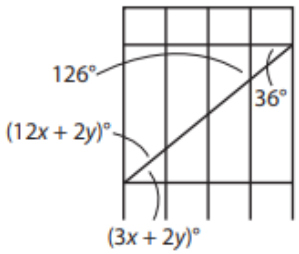
7. In the diagram of a gate, the horizontal bars are parallel and the vertical bars are parallel. Find x and y. Name the postulates and/or theorems that you used to find the values.



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