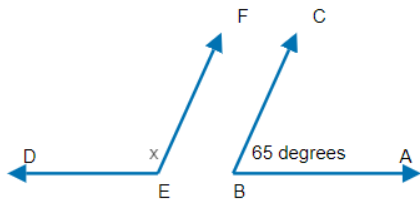


Warmup

1. Calculate value of $\angle FED$.



2. Calculate:

$$-2s - 5s = \underline{\hspace{2cm}}$$

$$4s - -1s = \underline{\hspace{2cm}}$$

3. Calculate the value of x :

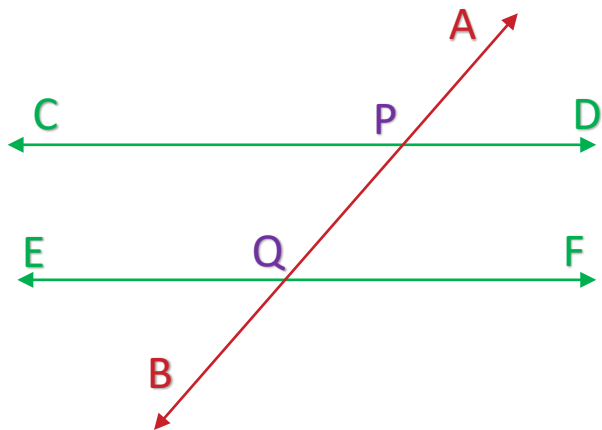
$$-4x + 212 = 180$$

I. Variables on Each Side of an Equation

II. Volume of a Cube

I. Transversals

Transversal: A line that intersects parallel lines



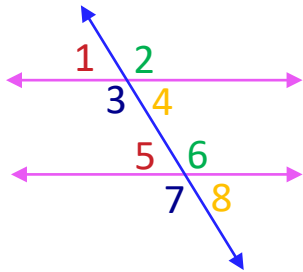
Line AB is the transversal

Line CD is parallel to Line EF

Point P and Point Q are points where the transversal intersects the parallel lines

Corresponding Angles: Angles on the same side of the transversal and the corresponding side of the parallel line.

Corresponding Angles are congruent.



The corresponding angles are:

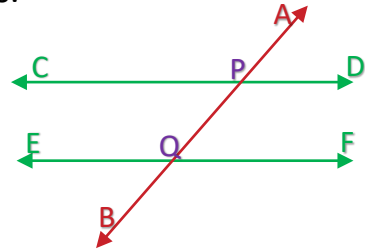
$\angle 1$ and $\angle 5$

$\angle 2$ and $\angle 6$

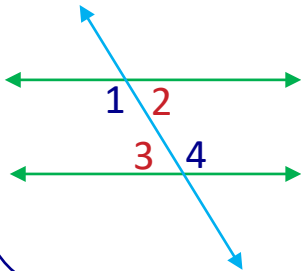
$\angle 3$ and $\angle 7$

$\angle 4$ and $\angle 8$

List all the corresponding angle pairs.



Alternate Interior Angles: Angles on the opposite side of the transversal and between the parallel lines.

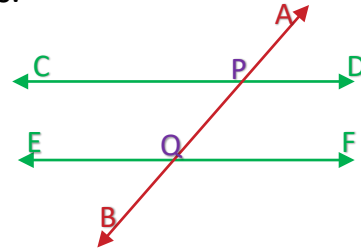


The alternate interior angles are:

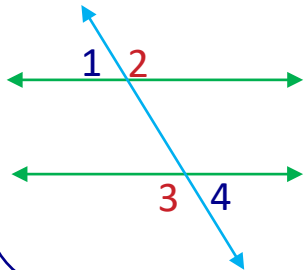
$\angle 1$ and $\angle 4$

$\angle 2$ and $\angle 3$

List all the alternate interior angle pairs.



Alternate Exterior Angles: Angles on the opposite side of the transversal and on the outside of the parallel lines.

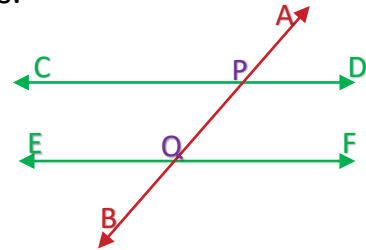


The alternate interior angles are:

$\angle 1$ and $\angle 4$

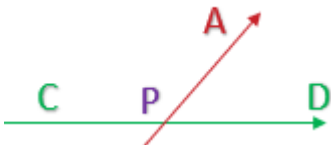
$\angle 2$ and $\angle 3$

List all the alternate exterior angle pairs.



II. Angle Measures for Parallel Lines and a Transversal

Angles are called supplementary when their _____ equals _____ degrees.

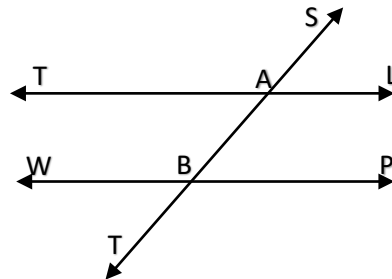


$\angle CPA$ and $\angle APD$ are supplementary angles.

$$\angle CPA = 105^\circ$$

$$\angle APD = \underline{\hspace{2cm}}^\circ$$

Use the angle relationships of a transversal to calculate the measure of each angle.



$$\angle SAT = 135^\circ$$

$$\angle SAL = \underline{\hspace{2cm}}^\circ$$

$$\angle TAB = \underline{\hspace{2cm}}^\circ$$

$$\angle ABW = \underline{\hspace{2cm}}^\circ$$

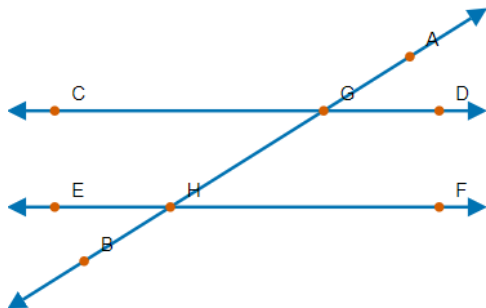
$$\angle SAT = \underline{\hspace{2cm}}^\circ$$

$$\angle LAB = \underline{\hspace{2cm}}^\circ$$

$$\angle PBT = \underline{\hspace{2cm}}^\circ$$

$$\angle PBA = \underline{\hspace{2cm}}^\circ$$

8. $CD \parallel EF$. Line GF intersects the parallel lines. $\angle AGC = 148^\circ$



$\angle AGD =$ _____

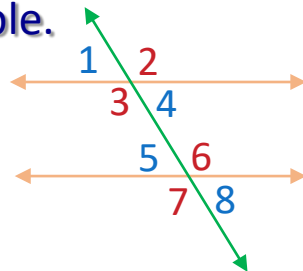
$\angle CGH =$ _____

$\angle DGH =$ _____

III. Using the Transversal to Calculate the Value of a Variable.

To calculate angle measures given algebraic expressions:

1. Determine the relationship of the angles
2. Combine like-terms
3. Solve the 2-step equation for x
4. Check the answer

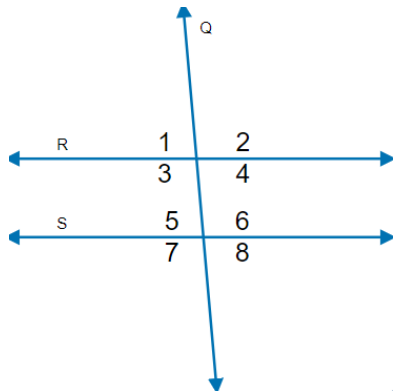


$\angle 7 = 5x - 75$ and $\angle 8 = -2x + 180$ Find the value of x

10. Line R $\parallel$ Line S.

$$\angle 3 = 15x + 55$$

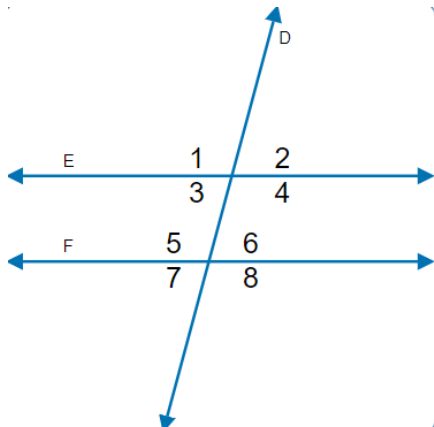
$$\angle 5 = 12x + 71$$



11. Line E $\parallel$ Line F.

$$\angle 6 = -4x + 169$$

$$\angle 8 = -7x + 187$$

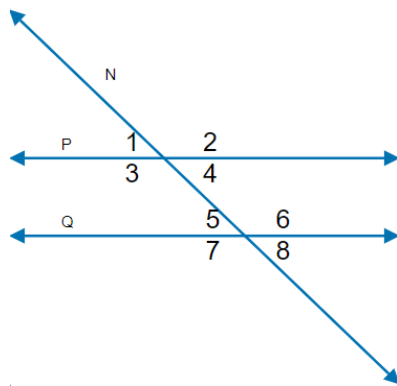


IV. Calculating Angle Measures using Algebraic Expressions

$$\angle 6 = 5x - 61 \text{ and } \angle 8 = -3x + 199$$

The value of $x =$ _____

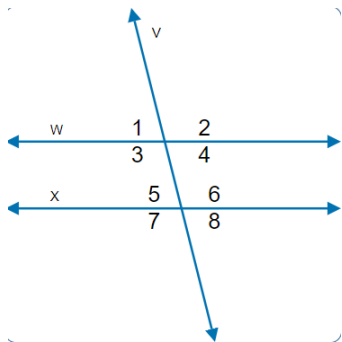
$\angle 5 =$ _____



$$\angle 3 = -5x + 86 \text{ and } \angle 8 = 2x + 100$$

The value of $x =$ _____

$$\angle 2 =$$



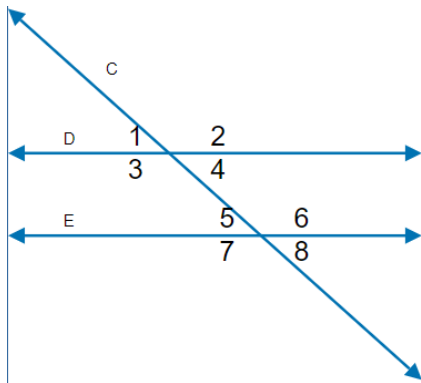
12. Line D || Line E.

$$\angle 6 = 5x - 28$$

$$\angle 8 = 8x + 26$$

The value of $x =$ _____

$$\angle 5 =$$







[illegible]