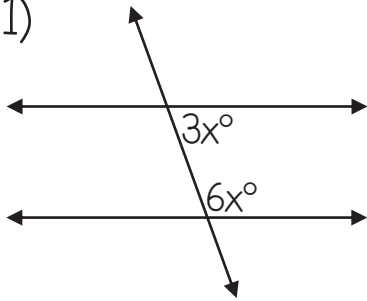


Angle Pairs Created by Parallel Lines Cut by a Transversal

For each set of angles name the angle pair, write the equation, solve the equation for x , and plug in x to find the missing angle measurements

1)



Type of angle pair Same-Side Interior

Show your work

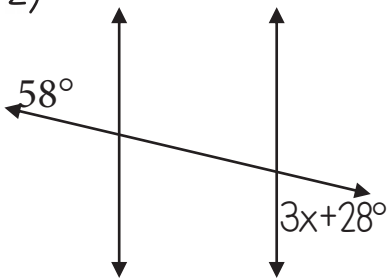
These angles are Supplementary

Equation $3x+6x=180$

$x=$ 20

Angle Measurements= 60° & 120°

2)



Type of angle pair Alternate Exterior

Show your work

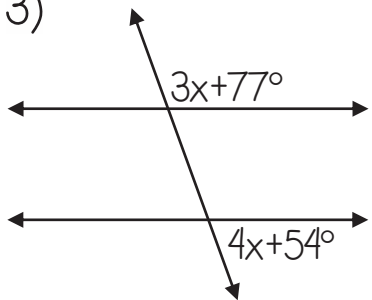
These angles are Congruent

Equation $58=3x+28$

$x=$ 10

Angle Measurements= 58° & 58°

3)



Type of angle pair Same-Side Exterior

Show your work

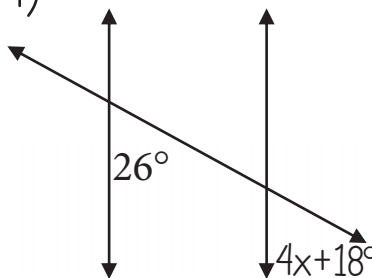
These angles are Supplementary

Equation $3x+77+4x+54=180$

$x=$ 7

Angle Measurements= 98° & 82°

4)



Type of angle pair Corresponding

Show your work

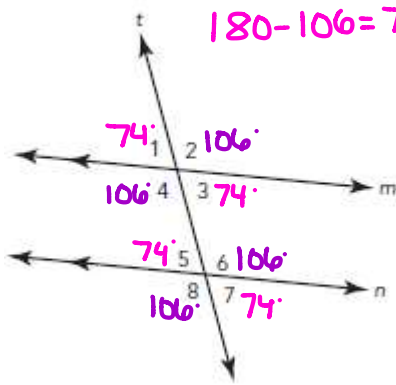
These angles are Congruent

Equation $26=4x+18$

$x=$ 2

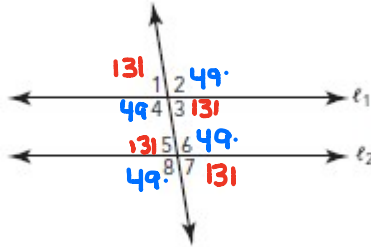
Angle Measurements= 26° & 26°

4 In the diagram, transversal t intersects parallel lines m and n . Suppose that the measure of $\angle 4$ is 106° . Classify the given angle pair. Then determine each measure.



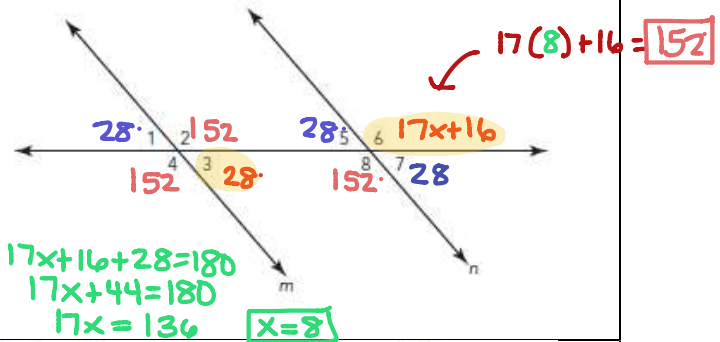
- a. $\angle 4$ and $\angle 1$ Supplementary $m\angle 1 = 74^\circ$
 b. $\angle 4$ and $\angle 2$ Vertical $m\angle 2 = 106^\circ$
 c. $\angle 4$ and $\angle 3$ Supplementary $m\angle 3 = 74^\circ$
 d. $\angle 4$ and $\angle 8$ Corresponding $m\angle 8 = 106^\circ$
 e. $\angle 4$ and $\angle 5$ Same side Int. $m\angle 5 = 74^\circ$
 f. $\angle 5$ and $\angle 7$ Vertical $m\angle 7 = 74^\circ$

5 In the figure shown, $\ell_1 \parallel \ell_2$. If $m\angle 8 = 49^\circ$, determine the measures of the other seven angles in the figure.

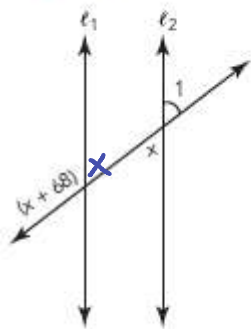


$$180 - 49 = 131$$

6 In the figure shown, $m \parallel n$. If $m\angle 6 = 17x + 16$ and $m\angle 3 = 28^\circ$, determine the measures of the other seven angles in the figure.



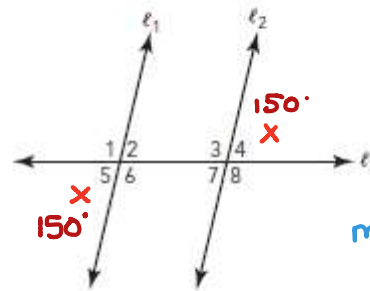
7 In the figure shown, $\ell_1 \parallel \ell_2$.



$$\begin{aligned} x + 68 + x &= 180 \\ 2x + 68 &= 180 \\ 2x &= 112 \\ x &= 56 \end{aligned}$$

What is $m\angle 1$? 56°

8 In the figure shown, lines 1 and 2 are parallel.

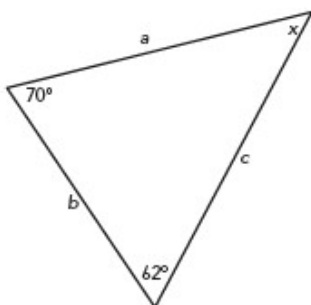


$$\begin{aligned} x + x &= 150 \\ 2x &= 150 \\ x &= 75 \end{aligned}$$

$$\begin{aligned} m\angle 1 &= 180 - 150 \\ m\angle 1 &= 30 \end{aligned}$$

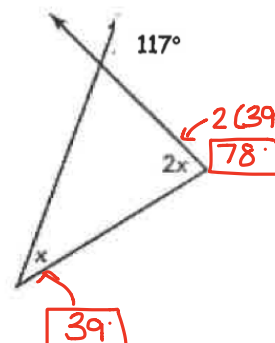
The sum of the measures of angles 4 and 5 is 150° . What is the measure of angle 1?

9 Determine the measure of the missing angle.



$$\begin{aligned} x + 70 + 62 &= 180 \\ x + 142 &= 180 \\ x &= 38 \end{aligned}$$

10 Determine the measure of the missing angles.



$$\begin{aligned} x + 2x &= 117 \\ 3x &= 117 \\ x &= 39 \end{aligned}$$