

Reteaching 9-2 Angle Relationships and Parallel Lines

Find the measures of $\angle 1$ and $\angle 2$. Given: $r \parallel s$.
Write an equation and solve for x .

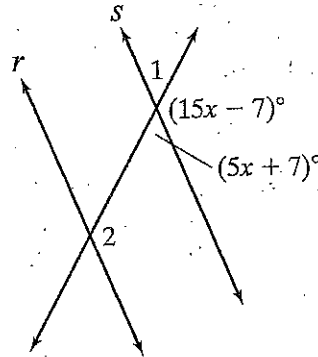
$$(5x + 7) + (15x - 7) = 180 \quad \text{These angles are supplementary.}$$

$$5x + 15x + 7 - 7 = 180 \quad \text{Simplify.}$$

$$20x = 180 \quad \text{Simplify.}$$

$$\frac{20x}{20} = \frac{180}{20} \quad \text{Divide each side by 20.}$$

$$x = 9 \quad \text{Simplify.}$$



Find the measure of the angle marked $(5x + 7)^\circ$ by substituting $x = 9$.

$$5x + 7 = 5(9) + 7 = 45 + 7 = 52$$

Since this angle and $\angle 1$ are vertical, they have the same measure.

Thus, $m\angle 1 = 52^\circ$.

We can find the measure of $\angle 2$ several ways. The angle marked $(15x - 7)^\circ$ and $\angle 2$ are corresponding angles, so they have the same measure. We can find this measure by substituting $x = 9$ into $15x - 7$ or by realizing that this angle and $\angle 1$ are supplementary.

$$180 - 52 = 128$$

$$15x - 7 = 15(9) - 7 = 135 - 7 = 128$$

Either way, $m\angle 2 = 128^\circ$.

Use the figure at the right.

Given: $p \parallel q$.

- Write an equation.

- Find the value of x .

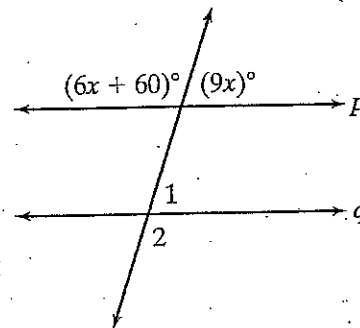
$x =$ _____

- Find $m\angle 1$.

$m\angle 1 =$ _____

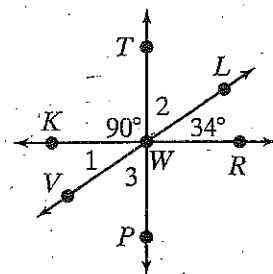
- Find $m\angle 2$.

$m\angle 2 =$ _____



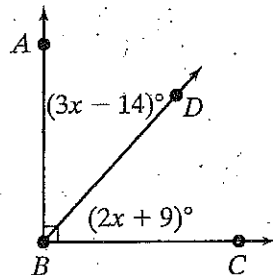
Practice 9-2 Angle Relationships and Parallel Lines

Find the measure of each angle in the figure at the right.



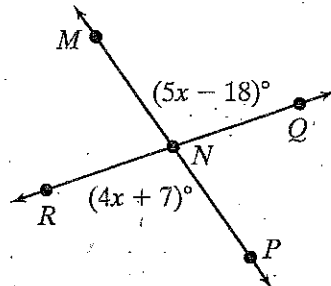
1. $m\angle 1$ _____
2. $m\angle 2$ _____
3. $m\angle 3$ _____
4. $m\angle VWR$ _____

Use the figure at the right for Exercises 5-8.



5. Write an equation. _____
6. Find the value of x . _____
7. Find $m\angle ABD$. _____
8. Find $m\angle DBC$. _____

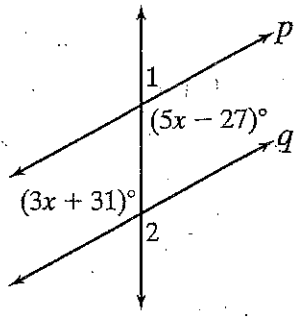
Use the figure at the right for Exercises 9-12.



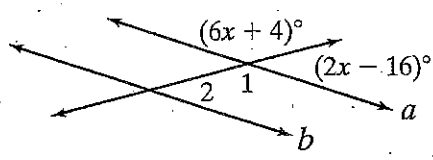
9. Write an equation. _____
10. Find the value of x . _____
11. Find $m\angle MNQ$. _____
12. Find $m\angle MNR$. _____

In each figure, find the measures of $\angle 1$ and $\angle 2$.

13. Given $p \parallel q$.



14. Given $a \parallel b$.



$m\angle 1 =$ _____ $m\angle 2 =$ _____ $m\angle 1 =$ _____ $m\angle 2 =$ _____

15. Find a pair of complementary angles such that the difference of their measures is 12° .
