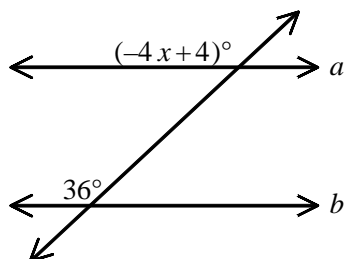


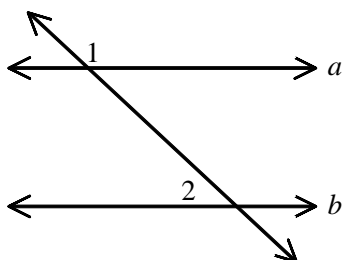
NAME: _____

1. What must be the value of x for a to be parallel to b ?



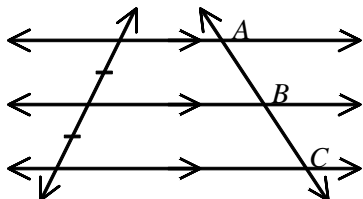
- [A] $-\frac{1}{8}$ [B] $-\frac{1}{10}$ [C] -10 [D] -8

2. What must be the value of x for a to be parallel to b ? $m\angle 1 = 116$ and $m\angle 2 = 8x - 22$



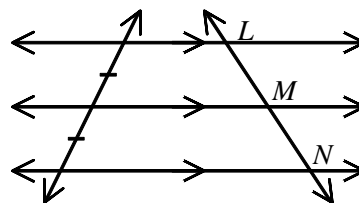
- [A] $\frac{4}{69}$ [B] $\frac{43}{4}$ [C] $\frac{69}{4}$ [D] $\frac{4}{43}$

3. Solve for x in the figure if $AB = 8x - 8$ and $BC = 5x - 3$.

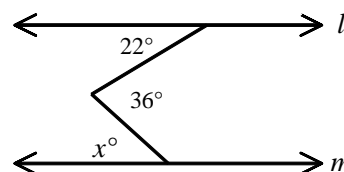


- [A] $\frac{3}{5}$ [B] $\frac{5}{3}$ [C] $\frac{13}{5}$ [D] $\frac{5}{13}$

4. Solve for x in the figure if $LM = 5x - 5$ and $MN = 4x + 5$.

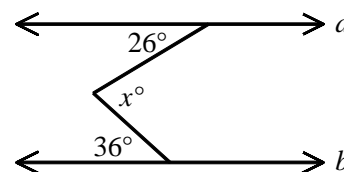


5. What must be the value of x for l to be parallel to m ?



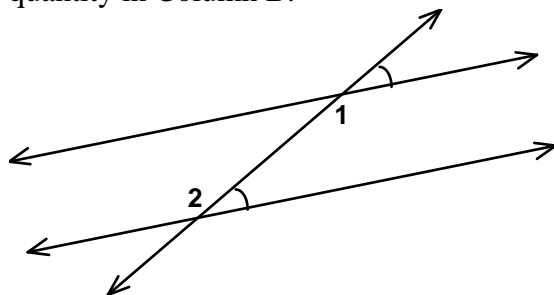
- [A] 14° [B] 12° [C] 17° [D] 58°

6. What must be the value of x for a to be parallel to b ?



NAME: _____

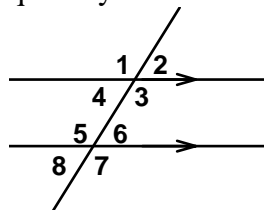
7. Compare the quantity in Column A with the quantity in Column B.



Column A	Column B
$m\angle 1$	$m\angle 2$

- [A] The quantity in Column A is greater.
[B] The quantity in Column B is greater.
[C] The quantities are equal.
[D] The relationship cannot be determined on the basis of the information supplied.

8. Compare the quantity in Column A with the quantity in Column B.



Column A	Column B
$m\angle 1$	$m\angle 6$

- [A] The quantity in Column A is greater.
[B] The quantity in Column B is greater.
[C] The two quantities are equal.
[D] The relationship cannot be determined on the basis of the information supplied.

9. Graph $3y - 2x = 11$ and the points $A(2, 5)$, $B(1, 1)$, and $C(4, 3)$ on the same coordinate plane. Use the triangle and the line to show that the sum of the angles in a triangle is 180° .

10. A triangle has vertices $A(0,0)$, $B(3, 6)$, and $C(7, 4)$. Find the coordinates of its image under a dilation centered at A with a scale factor of 3 and use what you know about slopes to show that the angles in the image must be congruent to those in the original triangle.

11. Graph and connect the points $A(-3, 2)$, $B(2, 6)$, $C(6, 4)$, and $D(1, 0)$. Measure the angles and use the theorems in this section to decide what kind of figure this is. Justify your answer in a second way.

12. $\triangle ABC$ is rotated 180° around point O , which is collinear with B and A . (B is between A and O .) How do you know that $\overline{A'C'}$ is parallel to \overline{AC} ?

[1] D

[2] B

[3] B

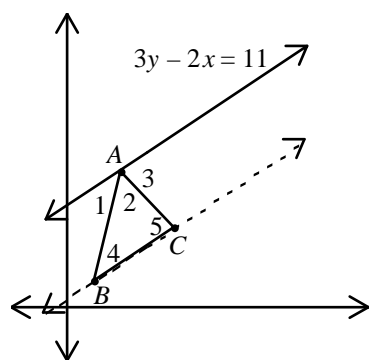
[4] 10

[5] A

[6] 62

[7] C

[8] D



\overleftrightarrow{BC} and $3y - 2x = 11$ are parallel because they both have a slope of $\frac{2}{3}$.

$m\angle 1 + m\angle 2 + m\angle 3 = 180$ since they form a straight \angle . $\angle 1 \cong \angle 4$ and $\angle 5 \cong \angle 3$ by the Alternate Interior Angles Postulate. By substitution, $m\angle 4 + m\angle 2 + m\angle 5 = 180$.

Therefore the sum of the angles of $\triangle ABC$ is

[9] 180.

$B' = (9, 18)$ and $C' = (21, 12)$. The slopes of both \overline{BC} and $\overline{B'C'}$ are $-\frac{1}{2}$, so the lines are

parallel. Hence $\angle ABC$ and $\angle B'$ and $\angle ACB$ and $\angle C'$ are congruent because of the Corresponding Angles Postulate. So, the angles in the image are congruent to those in

[10] the original triangle.

The figure is a parallelogram; students should justify their decision by determining pairs of

[11] slopes to be $-\frac{1}{2}$ and $\frac{4}{5}$.

We know $\angle A$ and $\angle A'$ are congruent, so the lines are parallel by the converse of the alternate interior angles theorem.

[12]