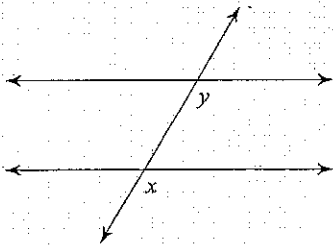


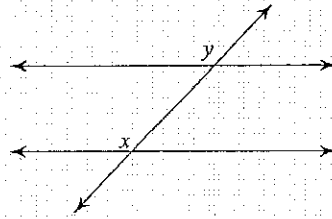
Parallel Lines & Transversals

Identify each pair of angles as corresponding, alternate interior, alternate exterior, same-side interior, vertical, or adjacent. Then identify as supplementary, complementary, or a linear pair.

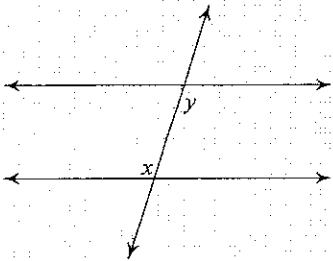
1)



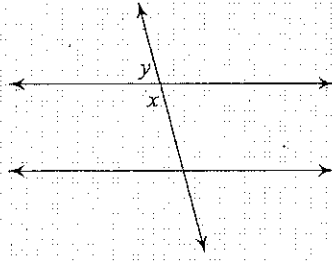
2)



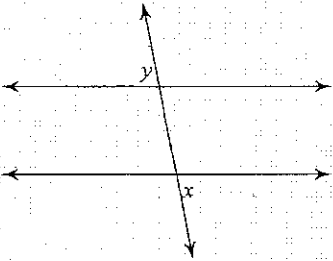
3)



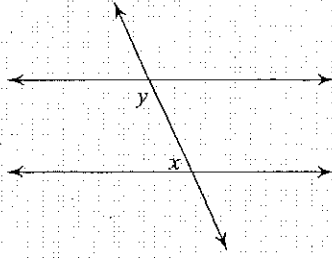
4)



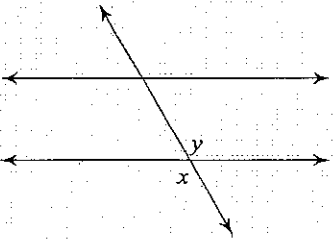
5)



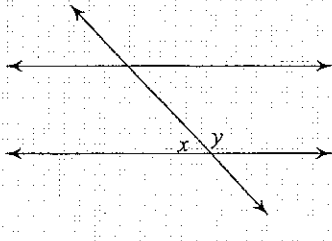
6)



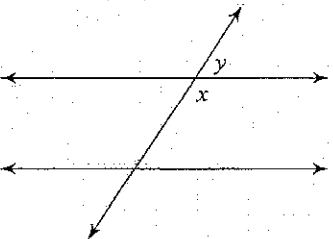
7)



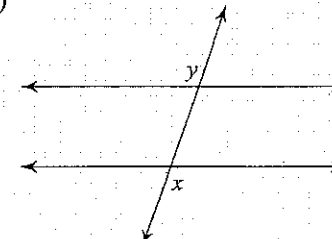
8)



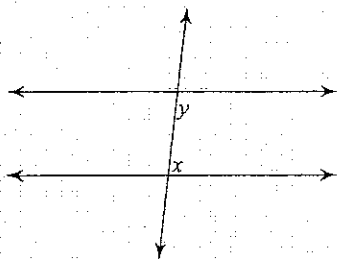
9)



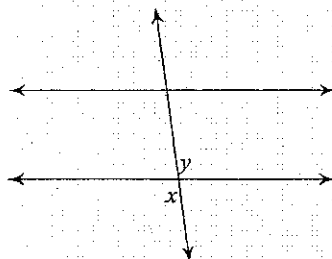
10)



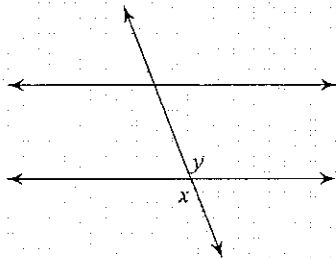
11)



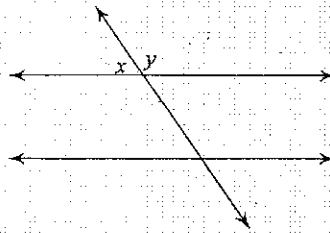
12)



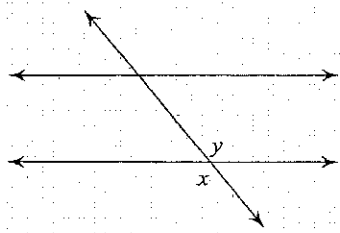
13)



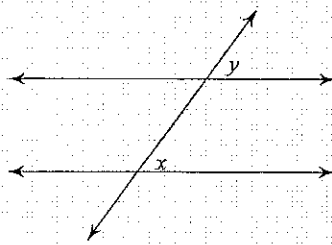
14)



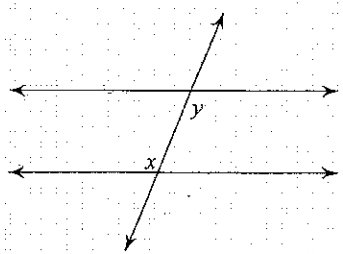
15)



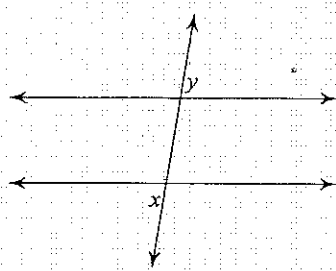
16)



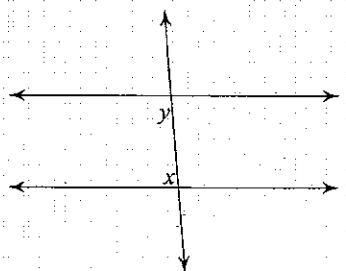
17)



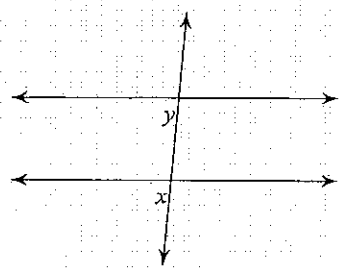
18)



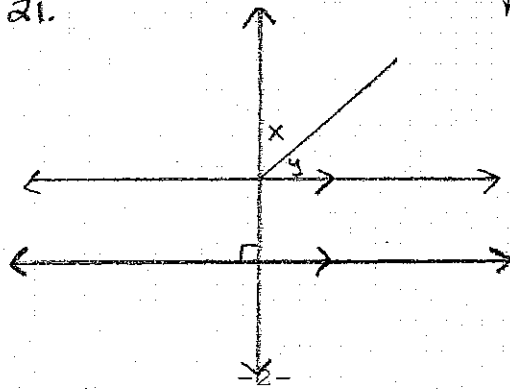
19)



20)



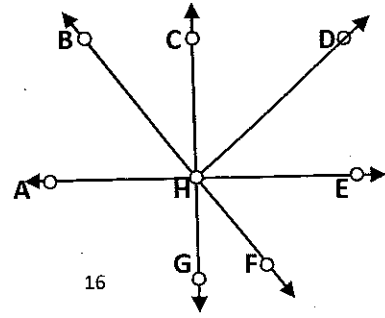
21.



PROBLEMS

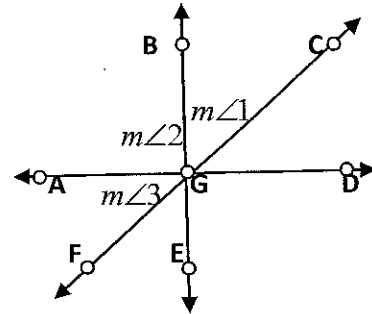
Copy and complete the statement given that $m\angle BHD = m\angle CHE = 90^\circ$.

1. $m\angle AHG = \underline{\hspace{2cm}}$
2. $m\angle CHA = \underline{\hspace{2cm}}$
3. If $m\angle CHD = 31^\circ$, then $m\angle DHE = \underline{\hspace{2cm}}$
4. If $m\angle BHA = 48^\circ$, then $m\angle EHF = \underline{\hspace{2cm}}$
5. If $m\angle GHF = 38^\circ$, then $m\angle AHB = \underline{\hspace{2cm}}$



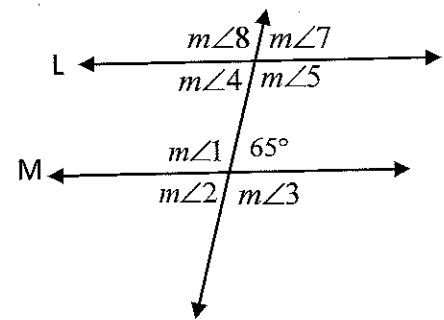
If $m\angle BGD = 90^\circ$ and $m\angle CGD = 26^\circ$, find

6. $m\angle 1$
7. $m\angle 2$
8. $m\angle 3$
9. $m\angle FGE$
10. $m\angle DGE$



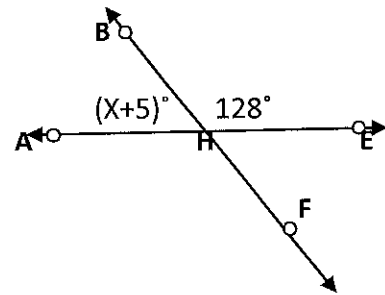
Lines L and M are parallel, find

11. $m\angle 1$
12. $m\angle 2$
13. $m\angle 3$
14. $m\angle 4$
15. $m\angle 5$
16. $m\angle 6$
17. $m\angle 7$
18. $m\angle 8$

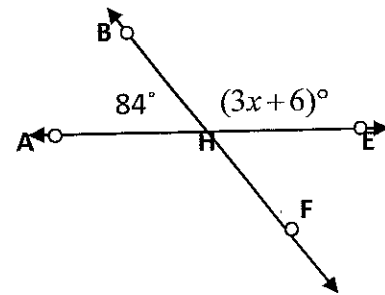


PROBLEMS:

11. Solve for x in the diagram



12. Solve for x in the diagram



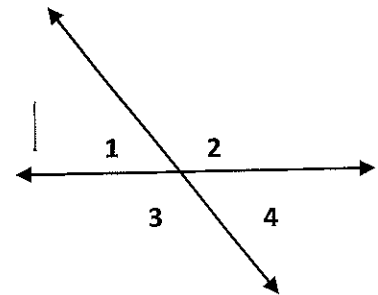
Use the diagram to decide whether the statement is true or false.

13. If $m\angle 1 = 47^\circ$, then $m\angle 2 = 43^\circ$.

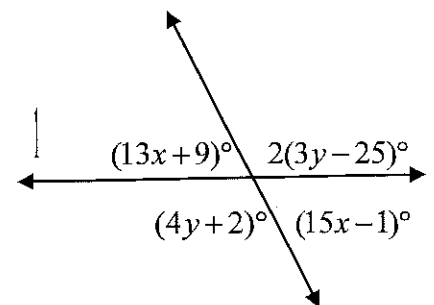
14. If $m\angle 1 = 47^\circ$, then $m\angle 3 = 47^\circ$.

15. $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 4$.

16. $m\angle 1 + m\angle 4 = m\angle 2 + m\angle 3$.



Find the value of the variable.

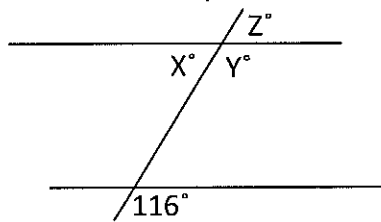


17. Find the value of x , y , and z (the horizontal lines are parallel to each other)

$x =$ _____

$y =$ _____

$z =$ _____

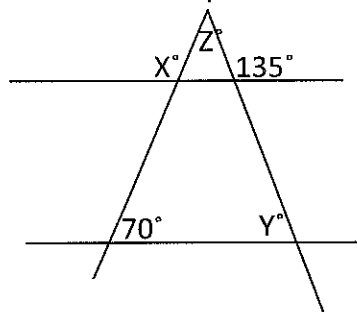


18. Find the value of x , y , and z (the horizontal lines are parallel to each other)

$x =$ _____

$y =$ _____

$z =$ _____

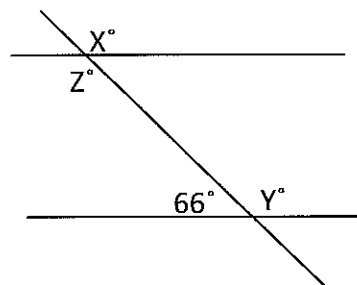


19. Find the value of x , y , and z (the horizontal lines are parallel to each other)

$x =$ _____

$y =$ _____

$z =$ _____

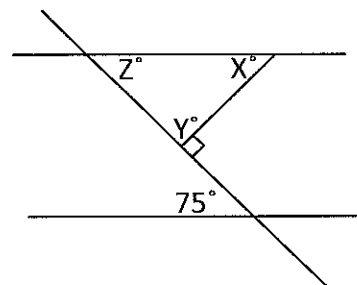


20. Find the value of x , y , and z (the horizontal lines are parallel to each other)

$x =$ _____

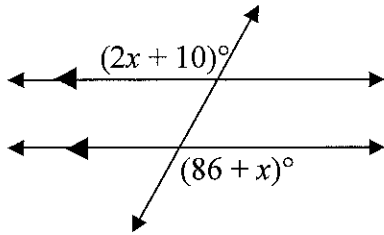
$y =$ _____

$z =$ _____



Identify the type of angles and their relationship. Write the equation used to solve for x . Then, find the value of x . Put a box around your answer.

3.

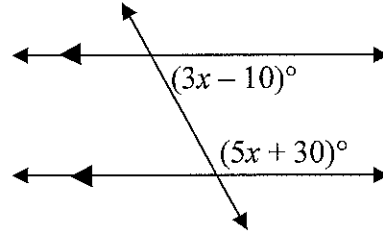


type of angles: _____

relationship: _____

equation: _____

4.

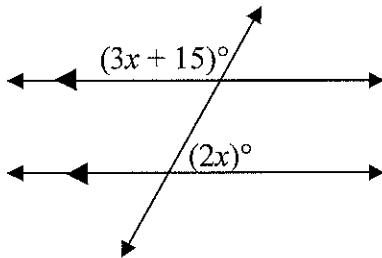


type of angles: _____

relationship: _____

equation: _____

5.

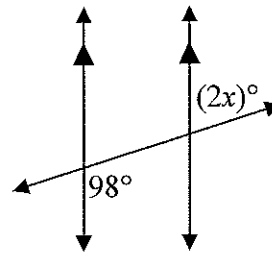


type of angles: _____

relationship: _____

equation: _____

6.



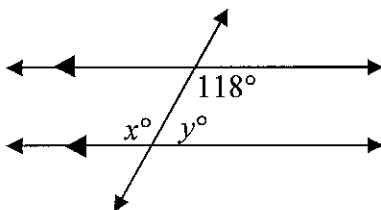
type of angles: _____

relationship: _____

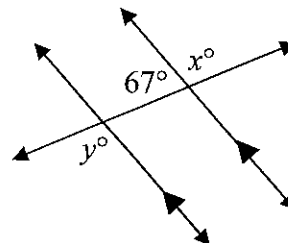
equation: _____

Find the values of x and y . Put a box around your answer.

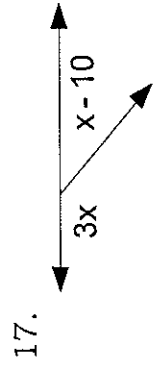
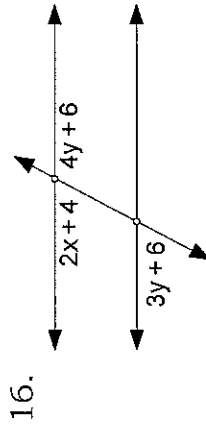
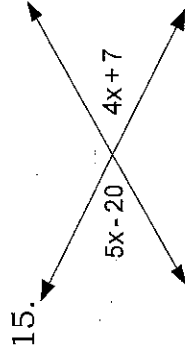
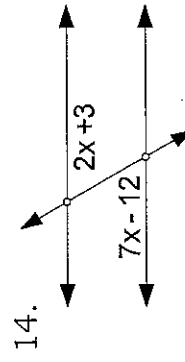
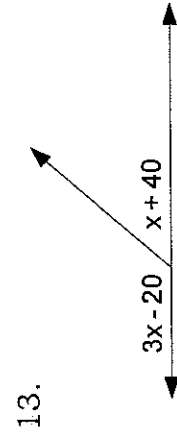
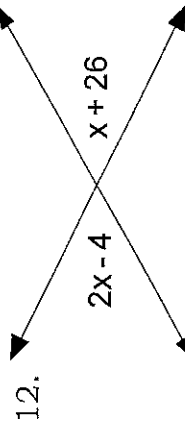
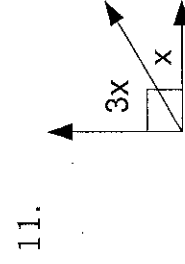
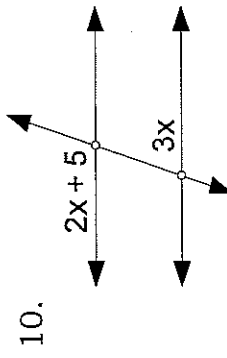
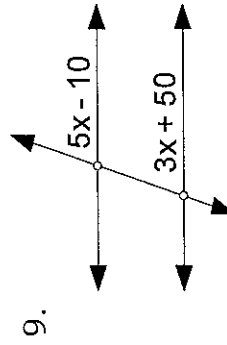
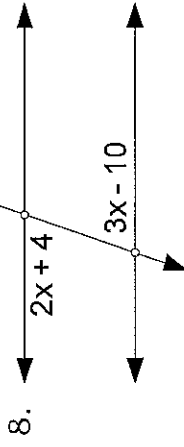
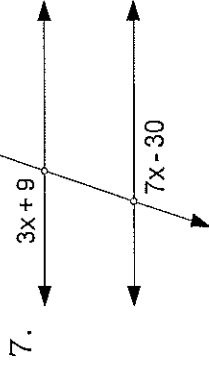
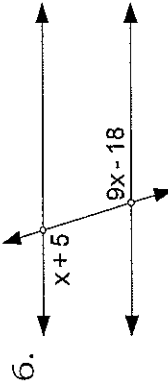
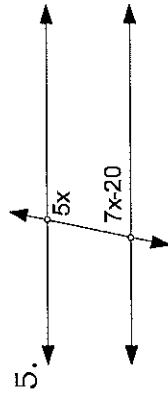
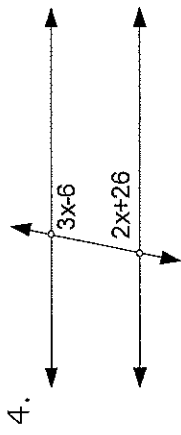
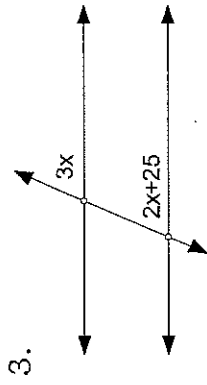
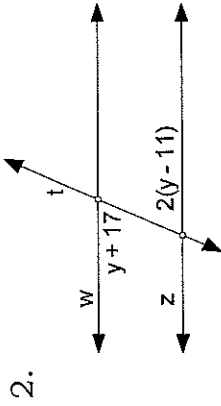
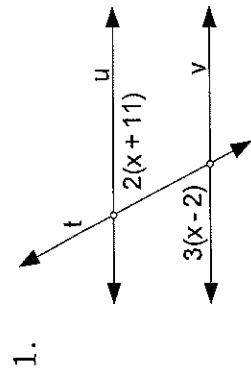
7.



8.



Set up and solve each problem on notebook paper. Show steps for the Algebra. Assume lines that look parallel are. After finding the value of the variable, state the size of the angles.



Review of Dilations

Name: _____

Period: _____ Date: _____

A **Dilation** is a transformation that produces an image that is the _____ as the original but _____.

- Dilations are _____ to the original figure.
- Dilations are centered around the origin $(0, 0)$, unless otherwise stated. (Point of Origin, "C")

Scale factor – is $\frac{\text{Dilated Image Length}}{\text{Original Image Length}}$, which is a _____.

- If the scale factor is greater than 1, the figure becomes _____. This is a _____.
- If the scale factor is between 0 and 1, the figure becomes _____. This is a _____.

Example: Would the following scale factors be an enlargement or a reduction?

1. $\frac{5}{2}$

2. $\frac{1}{4}$

3. $\frac{2}{5}$

4. $\frac{2}{2}$

5. $\frac{7}{3}$

Rule: $(x, y) \rightarrow (kx, ky)$ where k represents scale factor. _____ the coordinates by the scale factor.

Example 1: Triangle ABC has vertices $A(8, 1)$, $B(2, 4)$, and $C(-2, 6)$.

What are the vertices of its dilated image with a scale factor of 2?

A' _____ **B'** _____ **C'** _____

Example 2: Triangle ABC has vertices $A(0, 2)$, $B(4, 4)$, and $C(-1, 4)$.

What are the vertices of its *image* with a scale factor of 4?

A' _____ **B'** _____ **C'** _____

Example 3: Triangle ABC has vertices $A(4, 12)$, $B(-8, 4)$, and $C(-20, 0)$.

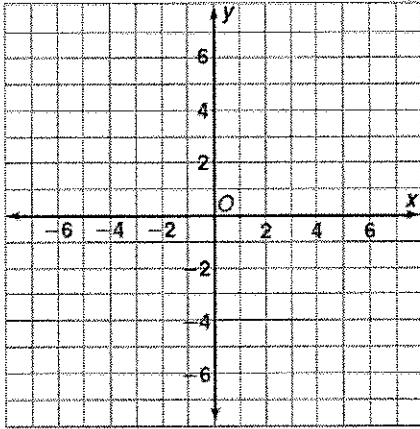
What are the vertices of its *image* with a scale factor of $1/4$?

A' _____ **B'** _____ **C'** _____

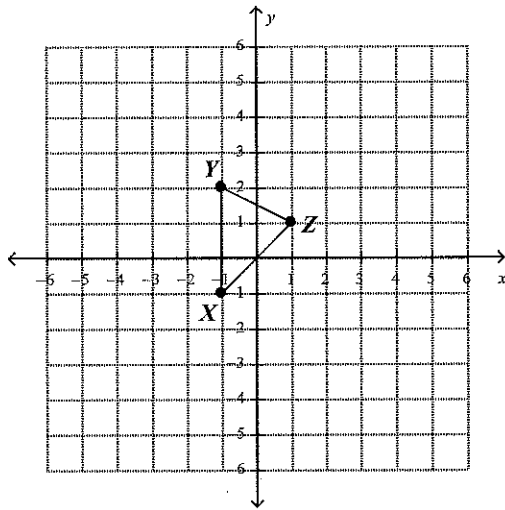
Example 4: Quadrilateral $PQRS$ has vertices $P(-2, 4)$, $Q(4, 4)$, $R(4, -2)$, and $S(-4, -4)$. It is dilated by a scale factor of $\frac{1}{2}$.

P' _____ Q' _____ R' _____ S' _____

Graph the original image and the dilated image below.



Example 5: Triangle XYZ is graphed below. Draw and label Triangle $X'Y'Z'$ after a dilation using a scale factor of two.



X _____

X' _____

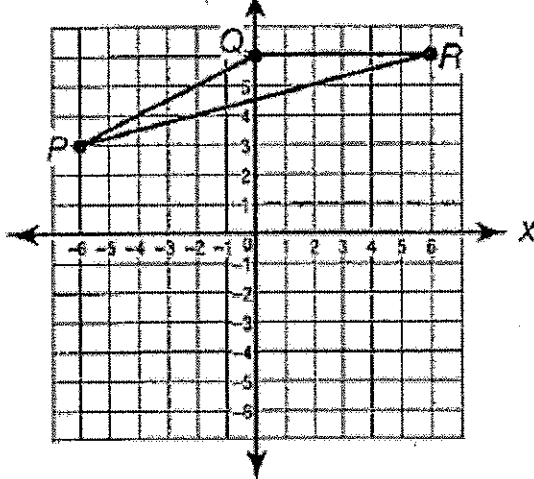
Y _____

Y' _____

Z _____

Z' _____

Example 5: Triangle PQR is graphed below. Draw and label Triangle $P'Q'R'$ after a dilation using a scale factor of $\frac{2}{3}$.



P _____

P' _____

Q _____

Q' _____

R _____

R' _____

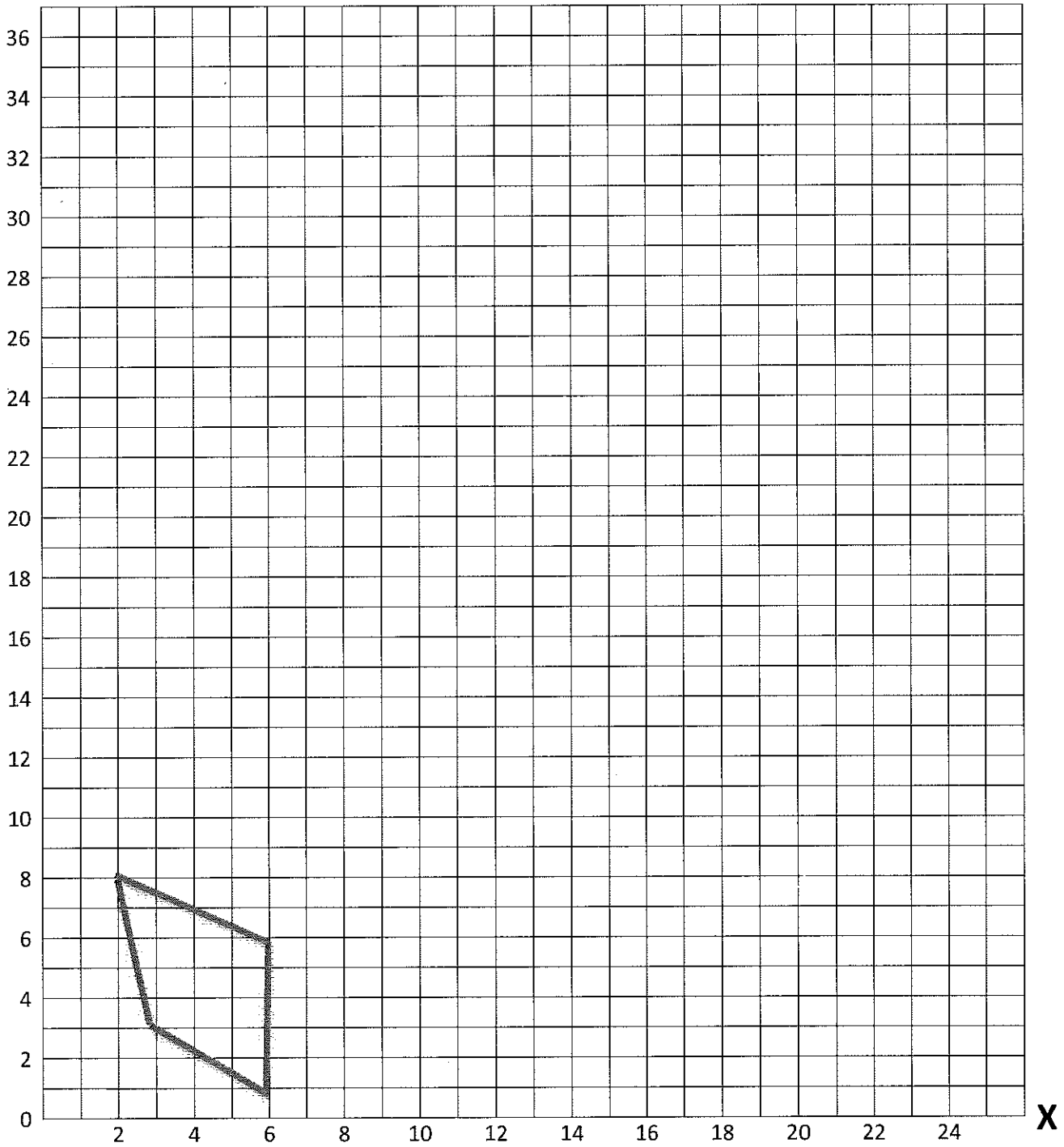
DILATIONS PRACTICE WORKSHEET

Name:

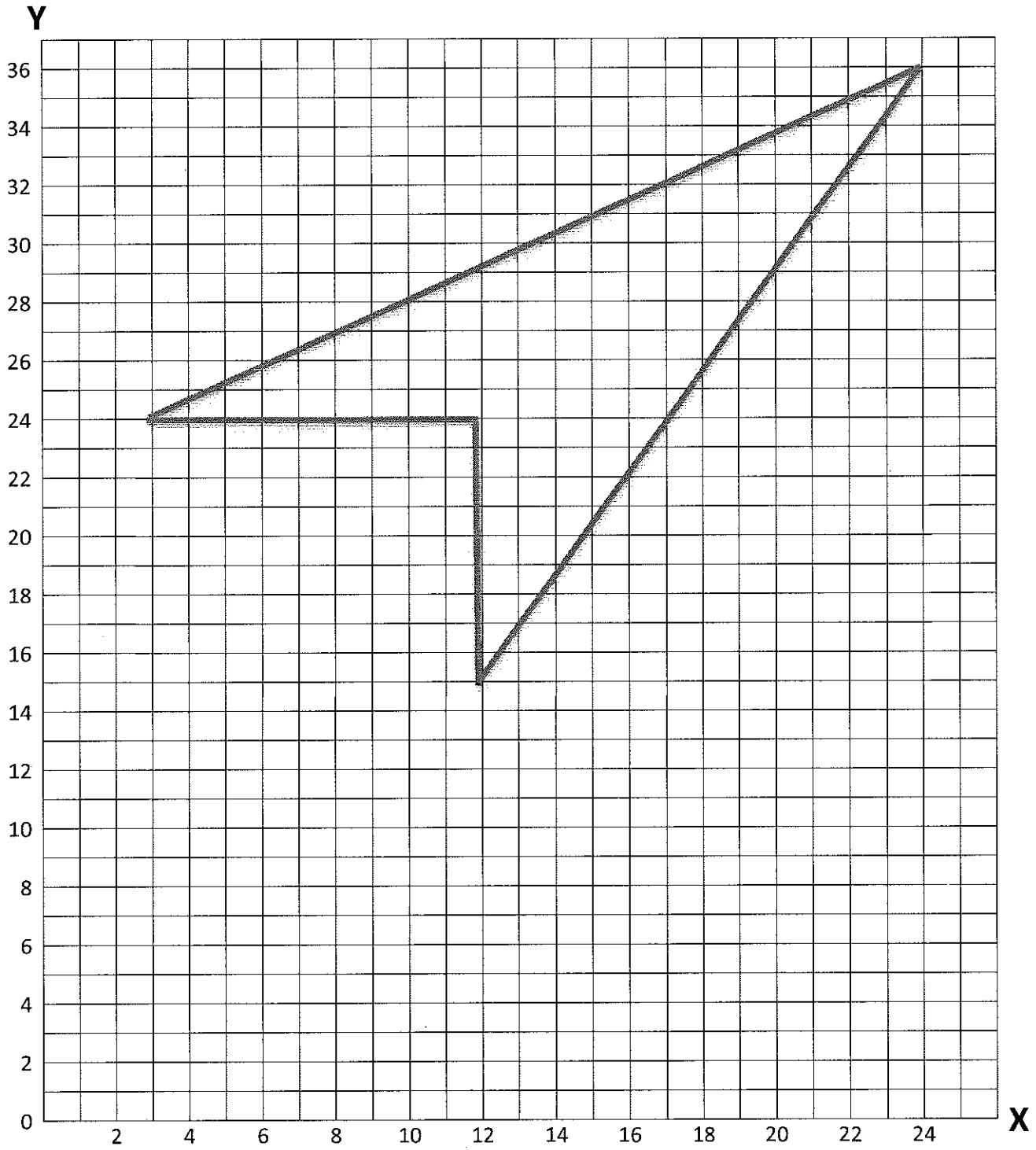
Date:

1. Construct a dilation of the image with a scale factor of 4. Label the coordinates of the vertices.

Y

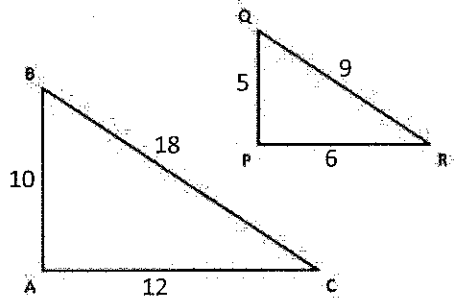


2. Construct a dilation of the image with a scale factor of $\frac{1}{3}$. Label the coordinates of the vertices.

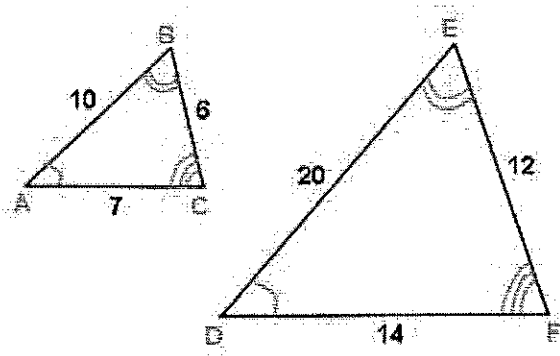


Similar Triangles

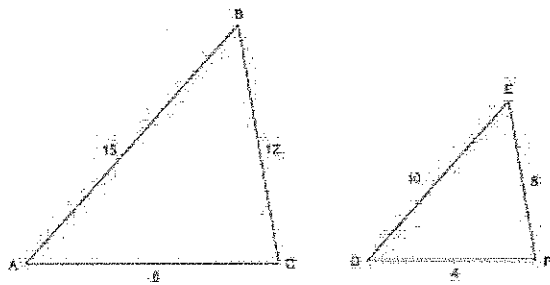
9.



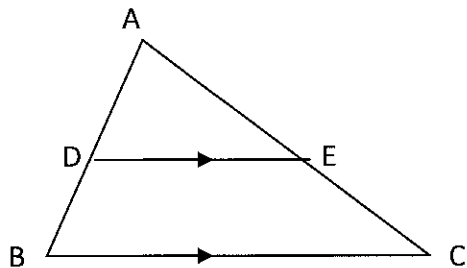
10.



11.



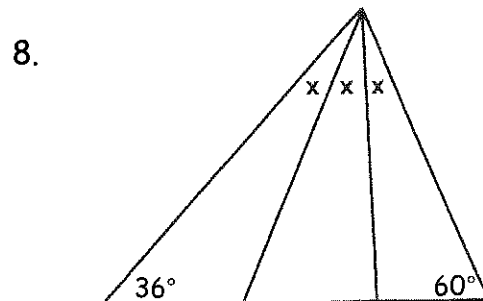
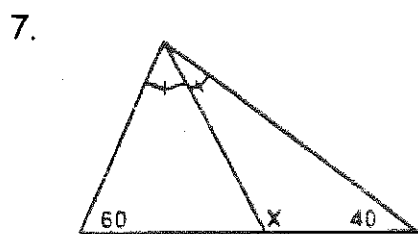
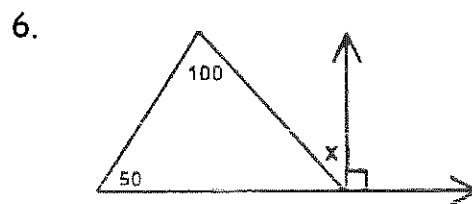
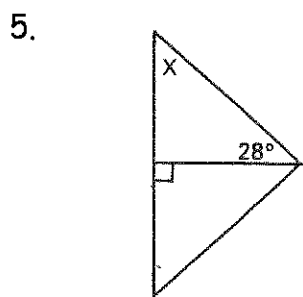
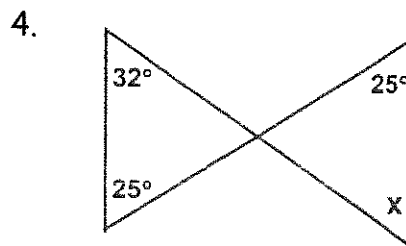
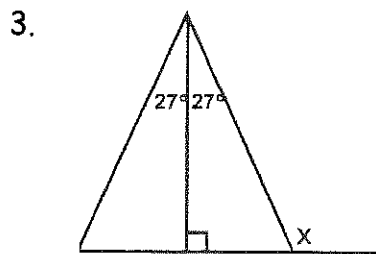
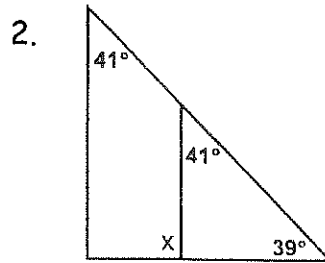
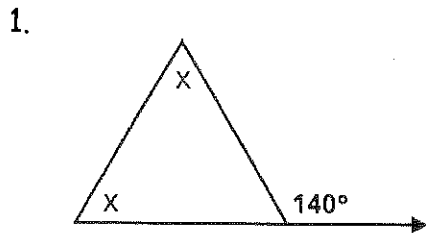
12.



Geometry
Worksheet

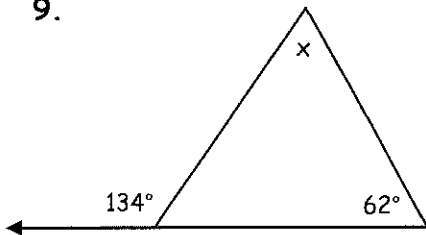
Name: _____
Date: _____ Period: _____

Find x in each figure below. (**Remember: The sum of three angles in any triangle is 180° **)



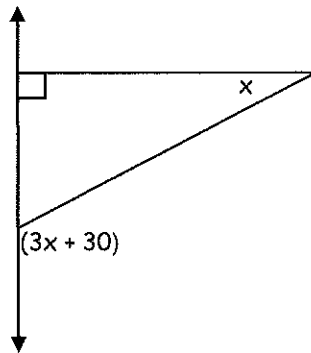
Find the value of x in each picture using the exterior angle theorem (in most cases).

9.



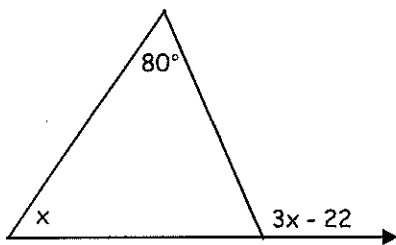
$x =$ _____

10.



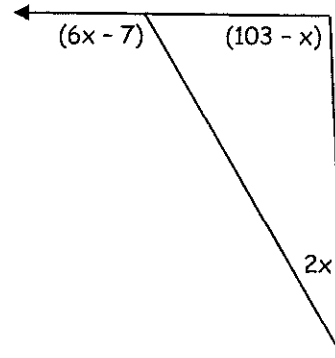
$x =$ _____

11.



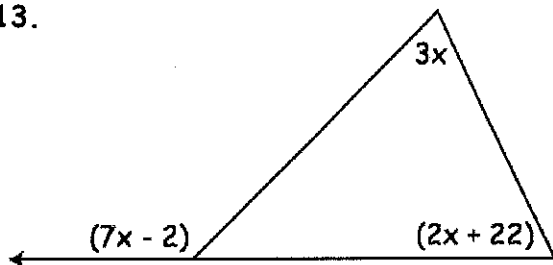
$x =$ _____

12.



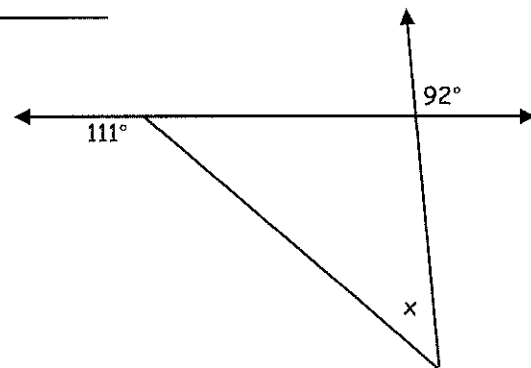
$x =$ _____

13.



$x =$ _____

14.

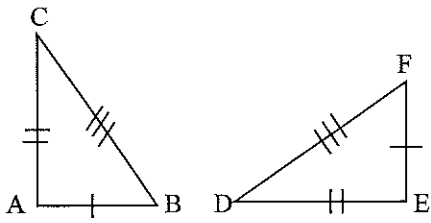


$x =$ _____

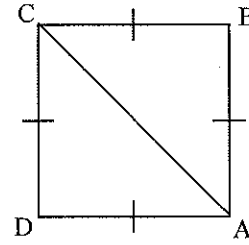
Triangle Congruence Worksheet #1

For each pair of triangles, tell which postulates, **if any**, make the triangles congruent.

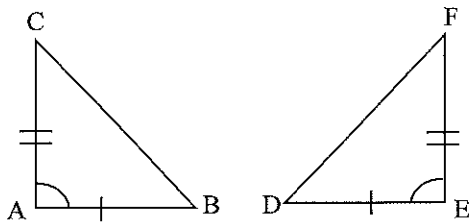
12. $\triangle ABC \cong \triangle EFD$ _____



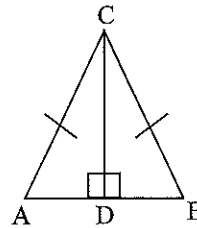
13. $\triangle ABC \cong \triangle CDA$ _____



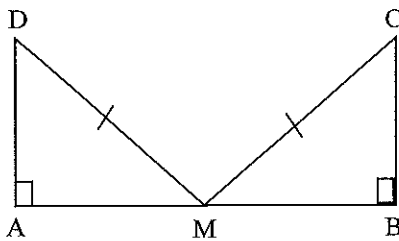
14. $\triangle ABC \cong \triangle EFD$ _____



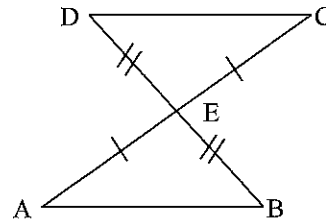
15. $\triangle ADC \cong \triangle BDC$ _____



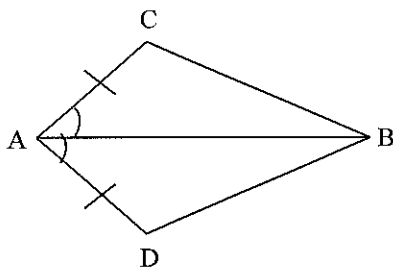
21. $\triangle MAD \cong \triangle MBC$ _____



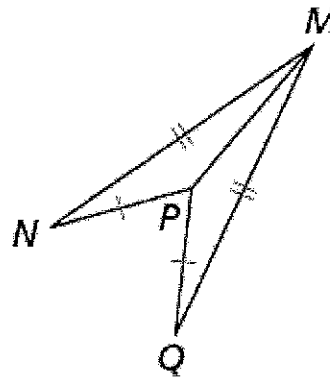
$\triangle ABE \cong \triangle CDE$ _____



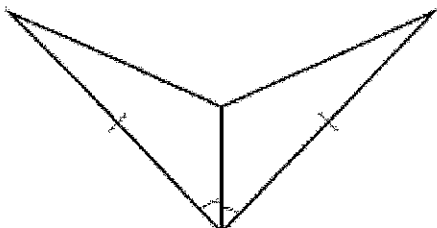
23. $\triangle ACB \cong \triangle ADB$ _____



23. $\triangle MNP \cong \triangle MQP$ _____



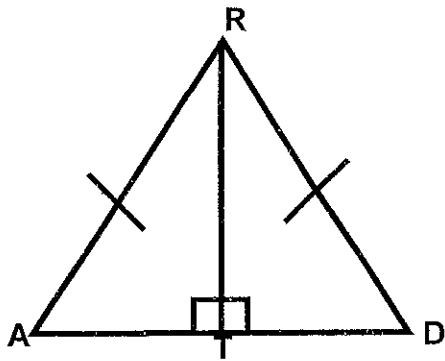
23. _____



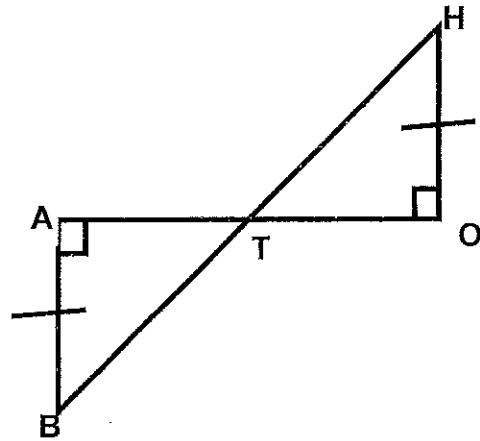
Right Triangle Congruence

Is it possible to prove that the two triangles are congruent? If so, state the right triangle congruence theorem you would use to prove the two triangles are congruent and the congruence statement.

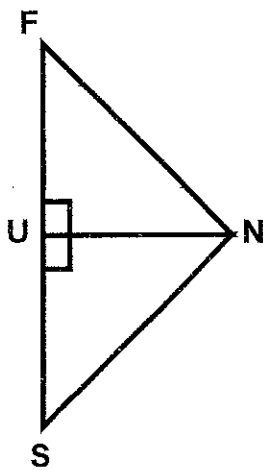
1.



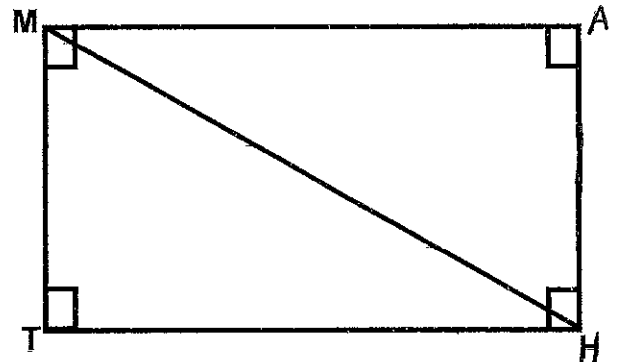
2.



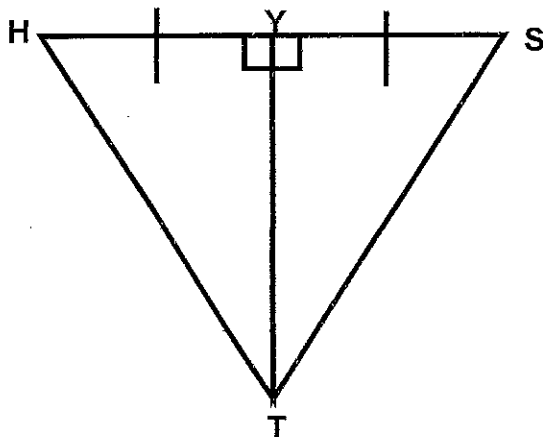
3.



4.

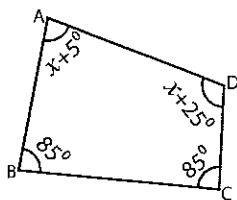


5.



Angles in Quadrilateral

Example:



Sum of the interior angles = 360°

Sum of the interior angles = $85^\circ + x + 25^\circ + x + 5^\circ + 85^\circ$

$360^\circ = 200^\circ + 2x$

$2x = 360^\circ - 200^\circ = 160^\circ$

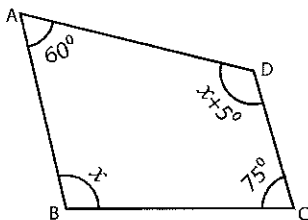
$x = \frac{160^\circ}{2} = 80^\circ$

$\angle A = x + 5^\circ = 80^\circ + 5^\circ = 85^\circ$

$\angle D = x + 25^\circ = 80^\circ + 25^\circ = 105^\circ$

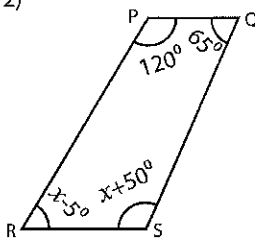
Find the missing angles in each quadrilateral.

1)



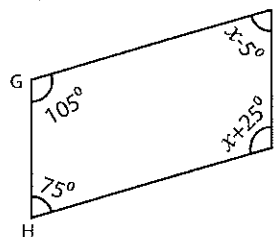
$x = \underline{\hspace{1cm}}$; $\angle B = \underline{\hspace{1cm}}$; $\angle D = \underline{\hspace{1cm}}$

2)



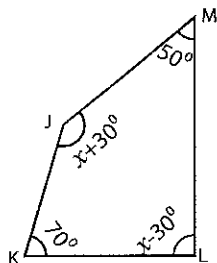
$x = \underline{\hspace{1cm}}$; $\angle R = \underline{\hspace{1cm}}$; $\angle S = \underline{\hspace{1cm}}$

3)



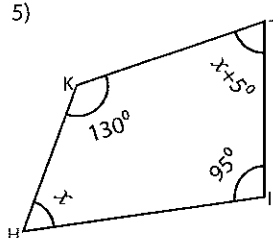
$x = \underline{\hspace{1cm}}$; $\angle I = \underline{\hspace{1cm}}$; $\angle J = \underline{\hspace{1cm}}$

4)



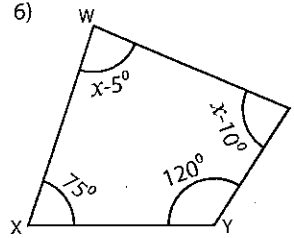
$x = \underline{\hspace{1cm}}$; $\angle J = \underline{\hspace{1cm}}$; $\angle L = \underline{\hspace{1cm}}$

5)



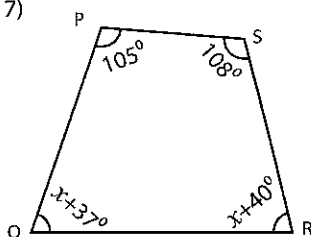
$x = \underline{\hspace{1cm}}$; $\angle H = \underline{\hspace{1cm}}$; $\angle J = \underline{\hspace{1cm}}$

6)



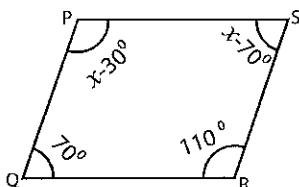
$x = \underline{\hspace{1cm}}$; $\angle W = \underline{\hspace{1cm}}$; $\angle Z = \underline{\hspace{1cm}}$

7)



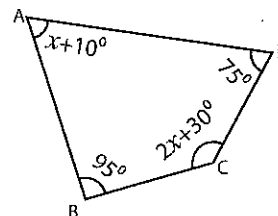
$x = \underline{\hspace{1cm}}$; $\angle Q = \underline{\hspace{1cm}}$; $\angle R = \underline{\hspace{1cm}}$

8)



$x = \underline{\hspace{1cm}}$; $\angle P = \underline{\hspace{1cm}}$; $\angle S = \underline{\hspace{1cm}}$

9)



$x = \underline{\hspace{1cm}}$; $\angle A = \underline{\hspace{1cm}}$; $\angle C = \underline{\hspace{1cm}}$

The Properties of a Parallelogram

- Opposite sides are parallel.
- Opposite sides are congruent.
- Consecutive angles are supplementary.
- Opposite angles are congruent.
- Diagonals bisect each other.

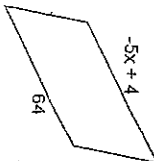


The figure is a parallelogram. Find the value of x .

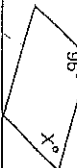
The figure is a parallelogram. Find the value of x .



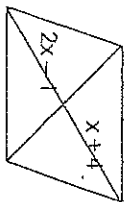
The figure is a parallelogram. Find the value of x .



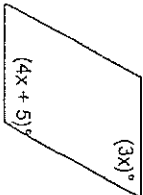
The figure is a parallelogram. Find the value of x .



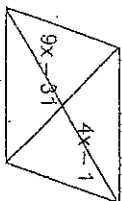
The figure is a parallelogram. Find the value of x .



The figure is a parallelogram. Find the value of x .



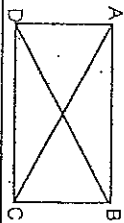
The figure is a parallelogram. Find the value of x .



The figure is a parallelogram. Find the value of x .

The Properties of a Rectangle

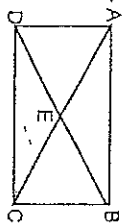
- Opposite sides are parallel.
- Opposite sides are congruent.
- All four angles are congruent (90°).
- Consecutive angles are supplementary.
- Opposite angles are congruent.
- Diagonals are congruent.
- Diagonals bisect each other.



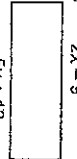
8. ABCD is a rectangle. $AC = 33$, $DB = 5x - 12$. Find the value of x .



9. MATH is a rectangle. $m\angle H = (3x + 54)^\circ$. Find the value of x .



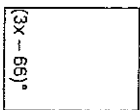
10. ABCD is a rectangle. $DE = 5x - 16$ & $EC = 14 - 5x$. Find the value of x .



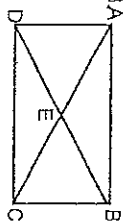
11. The figure is a rectangle. Find the value of x .

12.

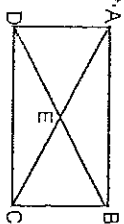
The figure is a rectangle. Find the value of x .



13. ABCD is a rectangle. $DE = 28$. Find the length of AC .



13. ABCD is a rectangle. $DE = 28$. Find the length of AC .



14. MATH is a rectangle. $AC = 26$ and $EB = 2x - 5$. Find the value of x .