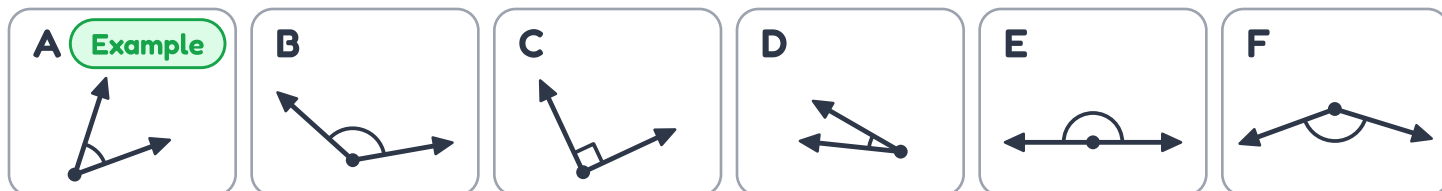


Angles of a Triangle

Sort angles by their size, then measure them.

Sort the angles. Write each letter in the right column.



acute	right	obtuse	straight
A			

Measure each angle. Make a ray longer if it does not reach the scale.

Example

1.

2.

3.

4.

5.

Which tool would you use to measure it? Circle it.

Example the angle of an open door
ruler protractor scale

6. how long one side of a triangle is
ruler protractor scale

7. the angle where a roof meets a wall
ruler protractor scale

8. how far apart two dots are
ruler protractor scale

Angles of a Triangle

The three angles of a triangle add up to 180° .

Tear off the three corners and line them up. What do they make?

Example

straight angle

$a + b + c = 180^\circ$

1.

angle

$a + b + c = \boxed{}^\circ$

2.

angle

$a + b + c = \boxed{}^\circ$

Measure the angles with your protractor. Then add them.

Example

A = 74°

B = 41°

C = 65°

Sum = 180°

3.

D = °

E = °

F = °

Sum = °

4.

G = °

H = °

J = °

Sum = °

5.

K = °

L = °

M = °

Sum = °

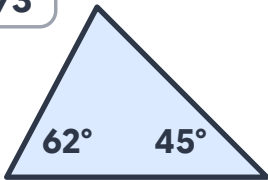
Angles of a Triangle

Find the unknown angle of each triangle.

Subtract the two angles you know from 180° . Write the equation.

Example

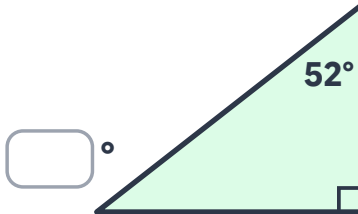
73°



Equation:

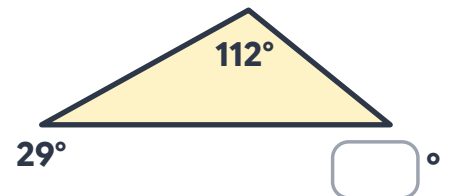
$$180 - 62 - 45 = 73$$

1.



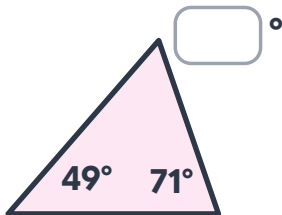
Equation:

2.



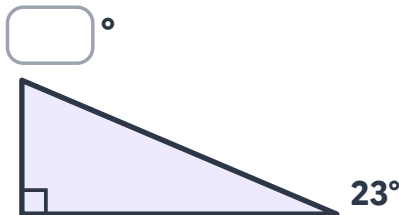
Equation:

3.



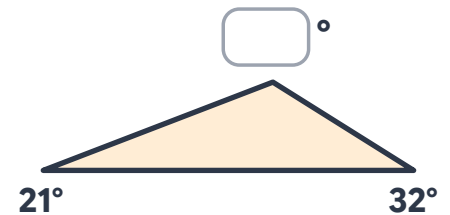
Equation:

4.



Equation:

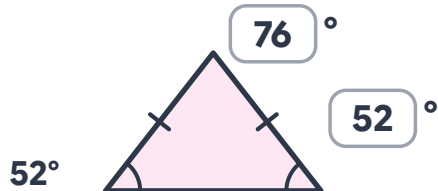
5.



Equation:

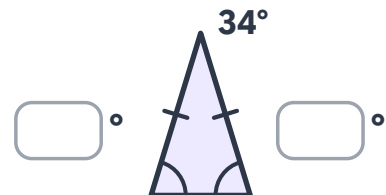
Matching marks show equal sides and equal angles. Find the angles.

Example



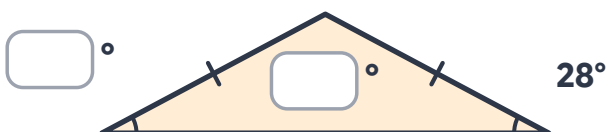
Equation: $180 - 52 - 52 = 76$

6.



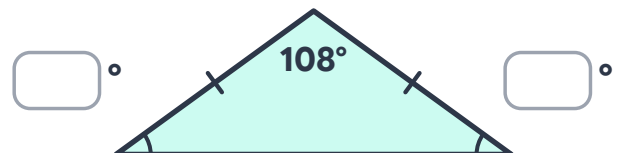
Equation: _____

7.



Equation: _____

8.



Equation: _____

Angles of a Triangle

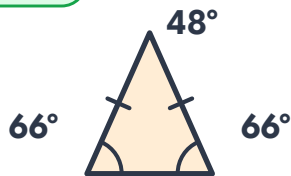
Use the angle measures and the marks to name triangles.

By angles **acute** 3 acute angles **right** 1 right angle **obtuse** 1 obtuse angle
By sides **equilateral** 3 equal sides **isosceles** 2 equal sides **scalene** no equal sides

Sides with the same tick marks are equal. Angles with the same arcs are equal.

Write the name by angles and the name by sides.

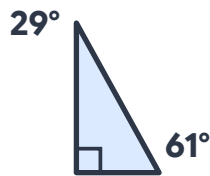
Example



Angles: acute

Sides: isosceles

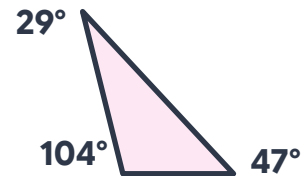
1.



Angles: _____

Sides: _____

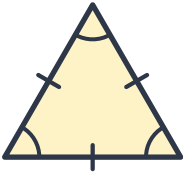
2.



Angles: _____

Sides: _____

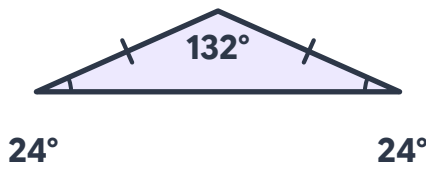
3.



Angles: _____

Sides: _____

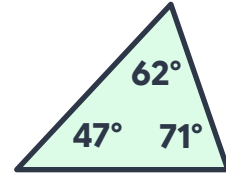
4.



Angles: _____

Sides: _____

5.



Angles: _____

Sides: _____

Can a triangle have these angles? Circle yes or no. Tell why.

Example

two right angles?

yes

Why? $90^\circ + 90^\circ$ is already 180°

no

6. two obtuse angles?

yes

Why? _____

no

7. three acute angles?

yes

Why? _____

no

8. a right and an obtuse angle?

yes

Why? _____

no

9. angles of 45° , 65° and 70° ?

yes

Why? _____

no

10. angles of 35° , 75° and 80° ?

yes

Why? _____

no

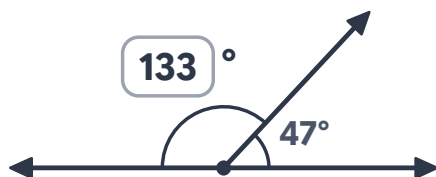
Angles of a Triangle

Angles on a line add up to 180° , around a point to 360° .

Write an equation, then find the unknown angle.

Example

a straight line

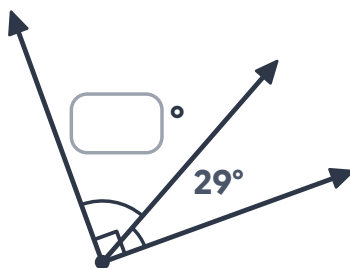


Equation:

$$180 - 47 = 133$$

1.

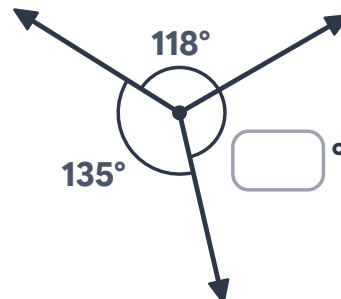
a right angle



Equation:

2.

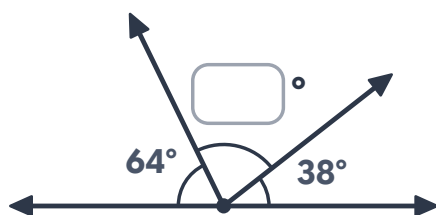
around a point



Equation:

3.

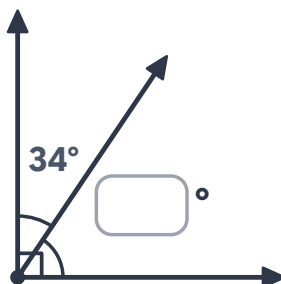
a straight line



Equation:

4.

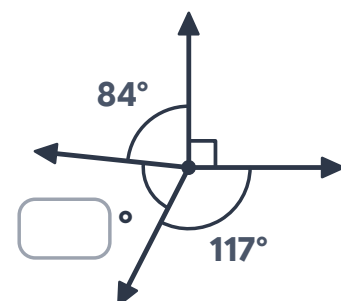
a right angle



Equation:

5.

around a point



Equation:

Solve. Write an equation and the answer in degrees.

6. Four slices of a pizza meet at its center. Three of them have angles of 72° , 95° and 108° . What is the angle of the fourth slice?

Equation: _____

Answer: $^\circ$

7. The sail of a boat is a triangle. Two of its angles are 48° and 77° . What is the third angle of the sail?

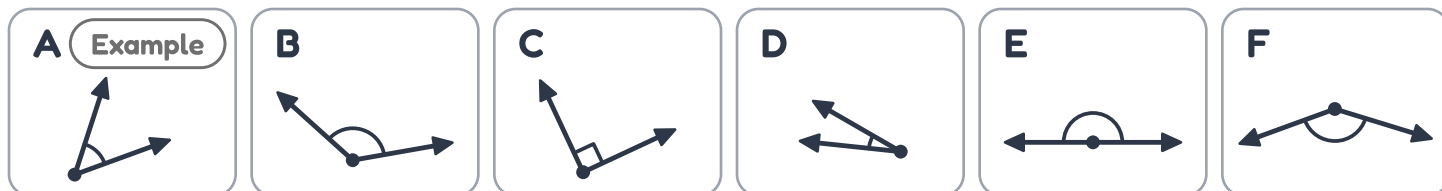
Equation: _____

Answer: $^\circ$

Angles of a Triangle

Sort angles by their size, then measure them.

Sort the angles. Write each letter in the right column.



acute	right	obtuse	straight
A			

Measure each angle. Make a ray longer if it does not reach the scale.

Example

1.

2.

3.

4.

5.

Which tool would you use to measure it? Circle it.

Example

the angle of an open door

ruler

protractor

scale

6.

how long one side of a triangle is

ruler

protractor

scale

7.

the angle where a roof meets a wall

ruler

protractor

scale

8.

how far apart two dots are

ruler

protractor

scale

Angles of a Triangle

The three angles of a triangle add up to 180° .

Tear off the three corners and line them up. What do they make?

Example

straight angle

$a + b + c = 180^\circ$

1.

angle

$a + b + c = \boxed{}^\circ$

2.

angle

$a + b + c = \boxed{}^\circ$

Measure the angles with your protractor. Then add them.

Example

A = 74°
B = 41°
C = 65°

Sum = 180°

3.

D = $\boxed{}^\circ$
E = $\boxed{}^\circ$
F = $\boxed{}^\circ$

Sum = $\boxed{}^\circ$

4.

G = $\boxed{}^\circ$
H = $\boxed{}^\circ$
J = $\boxed{}^\circ$

Sum = $\boxed{}^\circ$

5.

K = $\boxed{}^\circ$
L = $\boxed{}^\circ$
M = $\boxed{}^\circ$

Sum = $\boxed{}^\circ$

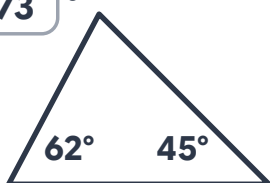
Angles of a Triangle

Find the unknown angle of each triangle.

Subtract the two angles you know from 180° . Write the equation.

Example

73°



Equation:

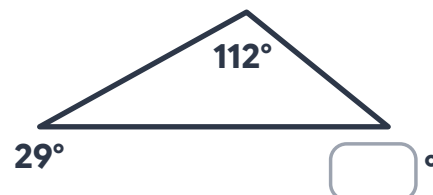
$$180 - 62 - 45 = 73$$

1.



Equation:

2.



Equation:

3.



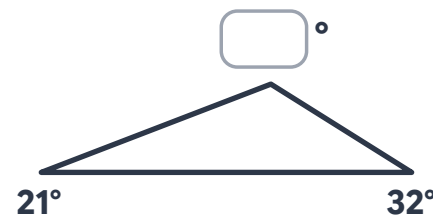
Equation:

4.



Equation:

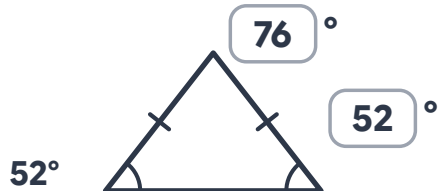
5.



Equation:

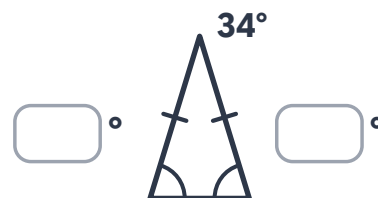
Matching marks show equal sides and equal angles. Find the angles.

Example



Equation: $180 - 52 - 52 = 76$

6.



Equation: _____

7.



Equation: _____

8.



Equation: _____

Angles of a Triangle

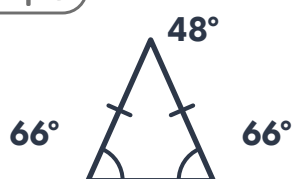
Use the angle measures and the marks to name triangles.

By angles **acute** 3 acute angles **right** 1 right angle **obtuse** 1 obtuse angle
By sides **equilateral** 3 equal sides **isosceles** 2 equal sides **scalene** no equal sides

Sides with the same tick marks are equal. Angles with the same arcs are equal.

Write the name by angles and the name by sides.

Example



Angles: acute

Sides: isosceles

1.



Angles: _____

Sides: _____

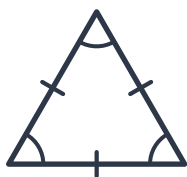
2.



Angles: _____

Sides: _____

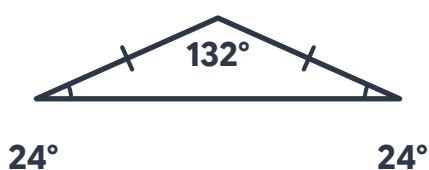
3.



Angles: _____

Sides: _____

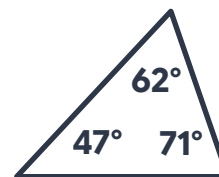
4.



Angles: _____

Sides: _____

5.



Angles: _____

Sides: _____

Can a triangle have these angles? Circle yes or no. Tell why.

Example two right angles?

Why? $90^\circ + 90^\circ$ is already 180°

yes

no

6. two obtuse angles?

Why? _____

yes

no

7. three acute angles?

Why? _____

yes

no

8. a right and an obtuse angle?

Why? _____

yes

no

9. angles of 45° , 65° and 70° ?

Why? _____

yes

no

10. angles of 35° , 75° and 80° ?

Why? _____

yes

no

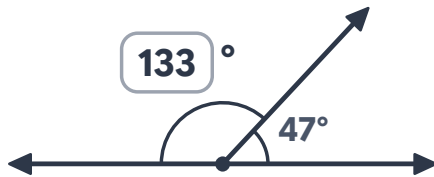
Angles of a Triangle

Angles on a line add up to 180° , around a point to 360° .

Write an equation, then find the unknown angle.

Example

a straight line

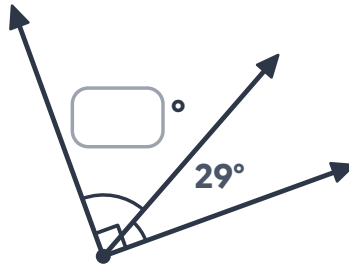


Equation:

$$180 - 47 = 133$$

1.

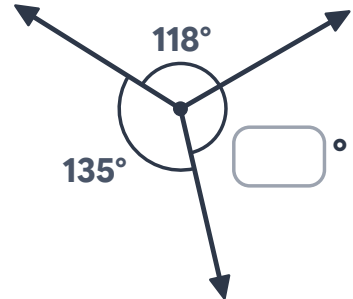
a right angle



Equation:

2.

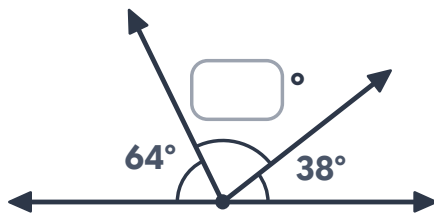
around a point



Equation:

3.

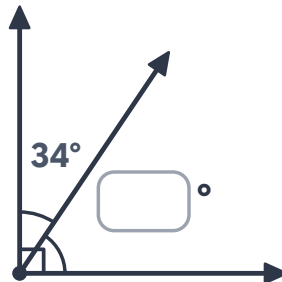
a straight line



Equation:

4.

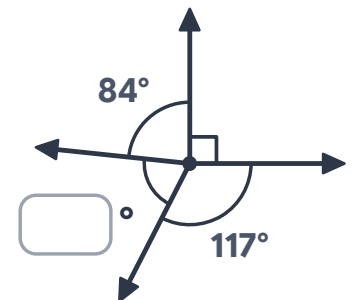
a right angle



Equation:

5.

around a point



Equation:

Solve. Write an equation and the answer in degrees.

- 6.** Four slices of a pizza meet at its center. Three of them have angles of 72° , 95° and 108° . What is the angle of the fourth slice?

Equation: _____

Answer: $^\circ$

- 7.** The sail of a boat is a triangle. Two of its angles are 48° and 77° . What is the third angle of the sail?

Equation: _____

Answer: $^\circ$

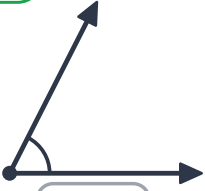
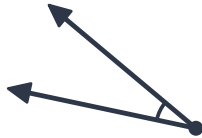
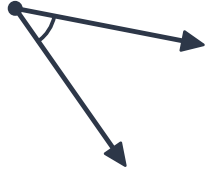
Angles of a Triangle

Sort angles by their size, then measure them.

Sort the angles. Write each letter in the right column.

acute	right	obtuse	straight
A D	C	B F	E

Measure each angle. Make a ray longer if it does not reach the scale.

Example  63 °	1.  28 °	2.  152 °
3.  81 °	4.  117 °	5.  44 °

Which tool would you use to measure it? Circle it.

Example the angle of an open door ruler protractor scale	6. how long one side of a triangle is ruler protractor scale
7. the angle where a roof meets a wall ruler protractor scale	8. how far apart two dots are ruler protractor scale

Angles of a Triangle

The three angles of a triangle add up to 180° .

Tear off the three corners and line them up. What do they make?

Example

straight angle

$a + b + c = 180^\circ$

1.

straight angle

$a + b + c = 180^\circ$

2.

straight angle

$a + b + c = 180^\circ$

Measure the angles with your protractor. Then add them.

Example

A = **74**°
B = **41**°
C = **65**°

Sum = **180**°

3.

D = **36**°
E = **42**°
F = **102**°

Sum = **180**°

4.

G = **49**°
H = **90**°
I = **41**°

Sum = **180**°

5.

K = **58**°
L = **79**°
M = **43**°

Sum = **180**°

Angles of a Triangle

Find the unknown angle of each triangle.

Subtract the two angles you know from 180° . Write the equation.

Example

73°



Equation:

$$180 - 62 - 45 = 73$$

1.

38°



Equation:

$$180 - 90 - 52 = 38$$

2.

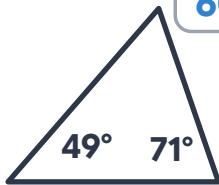


Equation:

$$180 - 29 - 112 = 39$$

3.

60°



Equation:

$$180 - 49 - 71 = 60$$

4.

67°



Equation:

$$180 - 90 - 23 = 67$$

5.

127°



Equation:

$$180 - 21 - 32 = 127$$

Matching marks show equal sides and equal angles. Find the angles.

Example

76°

52°



52°

Equation: $180 - 52 - 52 = 76$

6.

34°

73°



73°

Equation: $(180 - 34) \div 2 = 73$

7.

28°

124°

28°



Equation: $180 - 28 - 28 = 124$

8.

36°

108°

36°



Equation: $(180 - 108) \div 2 = 36$

Angles of a Triangle

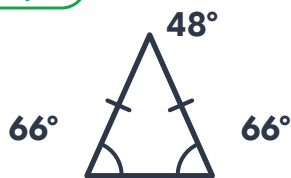
Use the angle measures and the marks to name triangles.

By angles **acute** 3 acute angles **right** 1 right angle **obtuse** 1 obtuse angle
By sides **equilateral** 3 equal sides **isosceles** 2 equal sides **scalene** no equal sides

Sides with the same tick marks are equal. Angles with the same arcs are equal.

Write the name by angles and the name by sides.

Example



Angles: acute
Sides: isosceles

1.



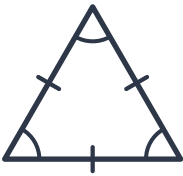
Angles: right
Sides: scalene

2.



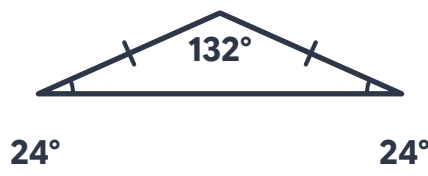
Angles: obtuse
Sides: scalene

3.



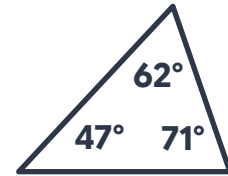
Angles: acute
Sides: equilateral

4.



Angles: obtuse
Sides: isosceles

5.



Angles: acute
Sides: scalene

Can a triangle have these angles? Circle yes or no. Tell why.

Example two right angles?

Why? $90^\circ + 90^\circ$ is already 180°

yes

no

6. two obtuse angles?

Why? Their sum is more than 180°

yes

no

7. three acute angles?

Why? $55^\circ + 60^\circ + 65^\circ = 180^\circ$

yes

no

8. a right and an obtuse angle?

Why? Together they are over 180°

yes

no

9. angles of 45° , 65° and 70° ?

Why? $45^\circ + 65^\circ + 70^\circ = 180^\circ$

yes

no

10. angles of 35° , 75° and 80° ?

Why? $35^\circ + 75^\circ + 80^\circ = 190^\circ$

yes

no

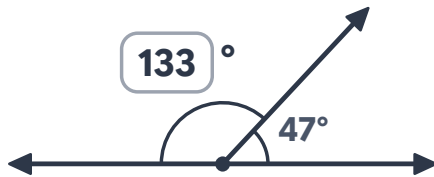
Angles of a Triangle

Angles on a line add up to 180° , around a point to 360° .

Write an equation, then find the unknown angle.

Example

a straight line

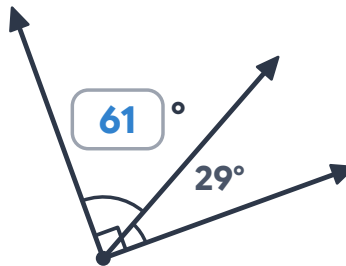


Equation:

$$180 - 47 = 133$$

1.

a right angle

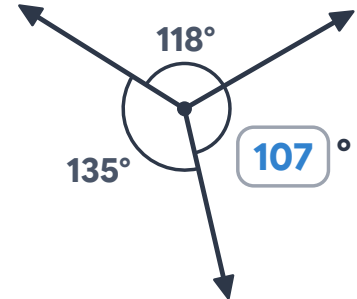


Equation:

$$90 - 29 = 61$$

2.

around a point

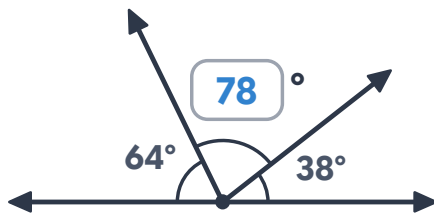


Equation:

$$360 - 118 - 135 = 107$$

3.

a straight line

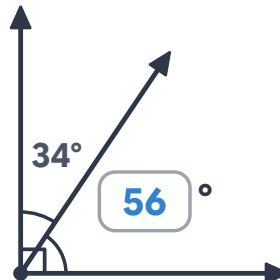


Equation:

$$180 - 38 - 64 = 78$$

4.

a right angle

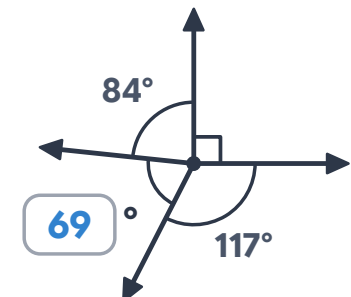


Equation:

$$90 - 34 = 56$$

5.

around a point



Equation:

$$360 - 90 - 84 - 117 = 69$$

Solve. Write an equation and the answer in degrees.

6. Four slices of a pizza meet at its center. Three of them have angles of 72° , 95° and 108° . What is the angle of the fourth slice?

Equation: $360 - 72 - 95 - 108 = 85$

Answer: 85°

7. The sail of a boat is a triangle. Two of its angles are 48° and 77° . What is the third angle of the sail?

Equation: $180 - 48 - 77 = 55$

Answer: 55°