CVPS Home Learning
WC: 11.05.20
Please write all answers / questions in your distance/home learning journals. Remember to email your work to your class teacher.

YEAR 5 Mathematics

Click on the lesson you would like to complete today.

LESSON 1
LESSON 2
LESSON 3
LESSON 4
LESSON 5

This week we are learning about angles then comparing and classifying both quadrilaterals and triangles. We will build upon our prior knowledge and develop our understanding on finding missing angles throughout.

Word of the day: clockwise

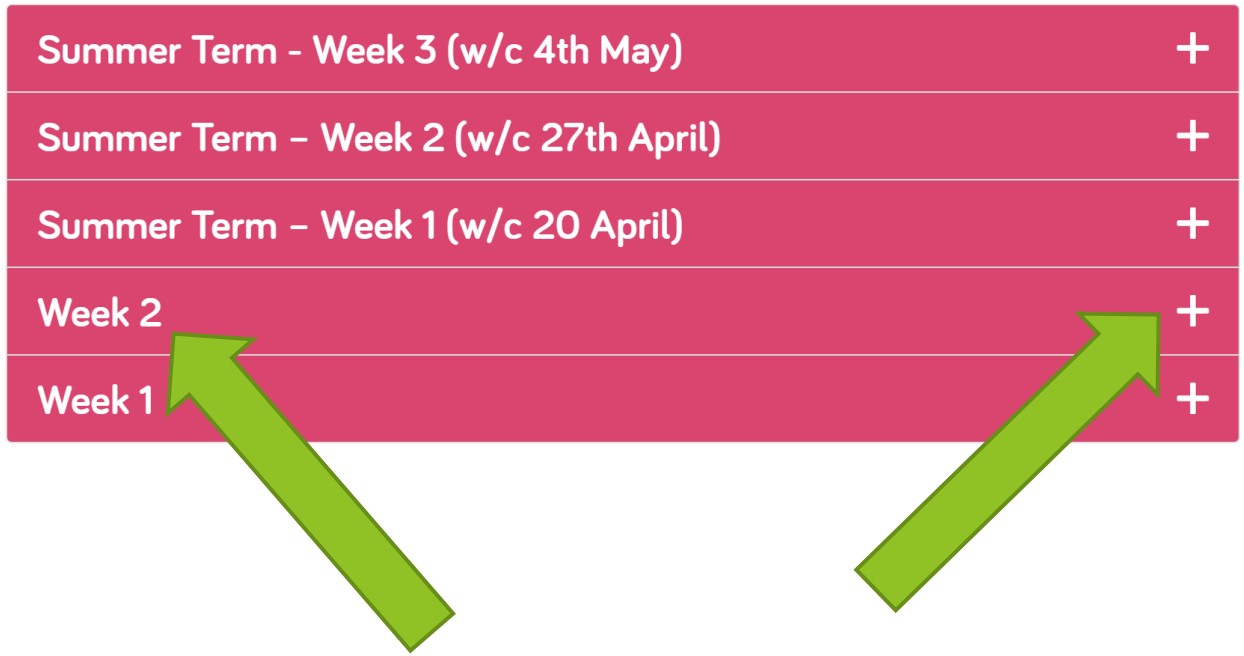
Lesson 1: Introducing angles

- In this lesson, we will introduced to angles. We will begin to understand angles using directions and with this knowledge, help us calculate turns in degrees.
- Follow the instructions on the next slide to find a corresponding video lesson.
- You will find a copy of the independent task, as referred to in the video, and additional challenges.

Why was 6 scared of 7?
Because 7 8 9!!

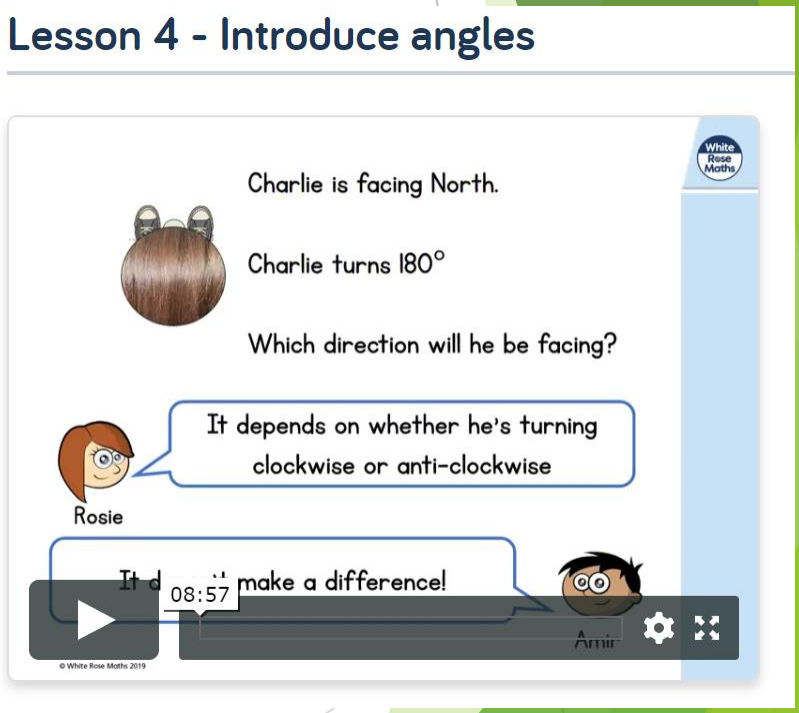
Click here for website, once open please follow the two steps below to find the correct lesson.

STEP 1



Open Week 2 by clicking the + symbol.

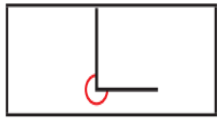
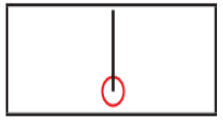
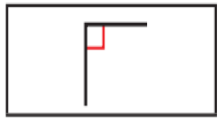
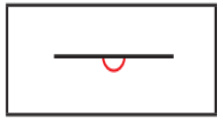
STEP 2



Find Lesson 4 – Introduce angles and watch the video as seen in the picture above.

Questions:

1 Match each angle to its picture and number of right angles.

90°		1 right angle
180°		4 right angles
270°		3 right angles
360°		2 right angles

2 Complete the sentences.

There is ☐ right angle in a quarter turn.

A quarter turn is ☐ degrees.

There are ☐ right angles in a half turn.

A half turn is ☐ degrees.

There are ☐ right angles in a three-quarter turn.

A three-quarter turn is ☐ degrees.

There are ☐ right angles in a full turn.

A full turn is ☐ degrees.

Now resume the video

3 **a)** Jack is facing the direction that the arrow is pointing.

Jack →

He turns a half turn.

Draw on the diagram to show the direction he is now facing and the angle he turned through.

How many degrees did he turn through? ☐

b) Dora is facing the direction that the arrow is pointing.

← Dora

She turns a quarter turn clockwise.

Draw on the diagram to show the direction she is now facing and the angle she turned through.

How many degrees did she turn through? ☐

c) Teddy is facing the direction that the arrow is pointing.

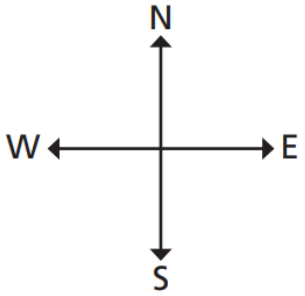
Teddy

He turns a three-quarter turn.

Draw on the diagram to show the two directions he could now be facing and the angles he could have turned through.

How many degrees did Teddy turn through? ☐

4 Here is a compass.



a) Huan is facing north.

He turns half a turn.

What direction is he facing now? _____

b) Whitney is facing east.

She turns 180°.

What direction is she facing now? _____

c) Alex is facing west.

She turns a quarter turn clockwise.

What direction is she facing now? _____

d) Amir is facing west.

He turns 90° anticlockwise.

What direction is he facing now? _____

e) Kim is facing south.

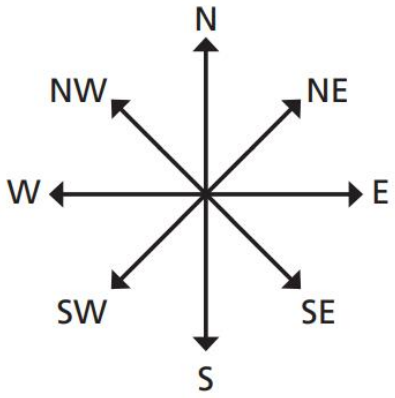
What angle does she need to turn through to face east?

_____

Is there more than one answer?

Now resume the video

5 Here is another compass.



a) Dexter is facing north-east.

He turns half a turn.

What direction is he facing now? _____

b) Esther is facing south-west.

She turns 270° anticlockwise.

What direction is she facing now? _____

c) Mo is facing south-west.

He turns, and he is still facing south-west.

How many degrees did he turn through? ☐

6 Complete the statements.

a) $\frac{1}{2}$ of a full turn = ☐

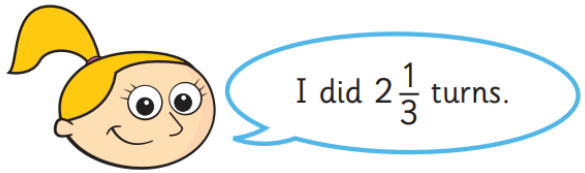
b) $\frac{1}{4}$ of a full turn = ☐

c) $\frac{3}{4}$ of a full turn = ☐

d) $1\frac{1}{4}$ turns = ☐

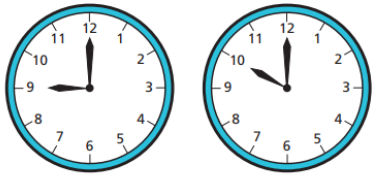
e) $5\frac{3}{4}$ turns = ☐

7



How many degrees did Eva turn through? ☐

8 Nijah looks at the clock at the start and at the end of her maths lesson.



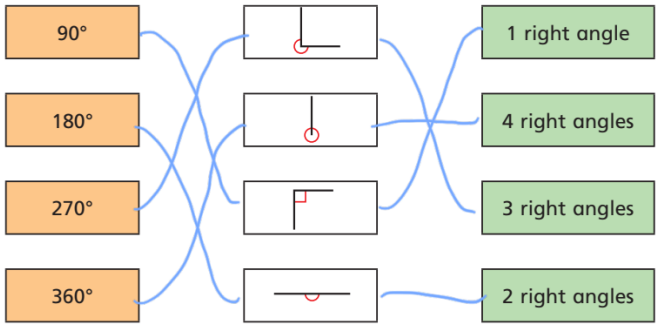
start **end**

How many degrees did the minute hand turn through during the lesson? ☐

Answers

Introduce angles

1 Match each angle to its picture and number of right angles.



2 Complete the sentences.

There is [1] right angle in a quarter turn.

A quarter turn is [90] degrees.

There are [2] right angles in a half turn.

A half turn is [180] degrees.

There are [3] right angles in a three-quarter turn.

A three-quarter turn is [270] degrees.

There are [4] right angles in a full turn.

A full turn is [360] degrees.

3 **a)** Jack is facing the direction that the arrow is pointing.

He turns a half turn.

Draw on the diagram to show the direction he is now facing and the angle he turned through.

How many degrees did he turn through? [180]

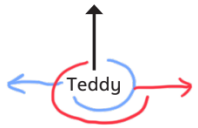
b) Dora is facing the direction that the arrow is pointing.

She turns a quarter turn clockwise.

Draw on the diagram to show the direction she is now facing and the angle she turned through.

How many degrees did she turn through? [90]

c) Teddy is facing the direction that the arrow is pointing.



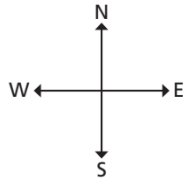
He turns a three-quarter turn.

Draw on the diagram to show the two directions he could now be facing and the angles he could have turned through.

How many degrees did Teddy turn through? [270]

Answers continued

4 Here is a compass.



a) Huan is facing north.
He turns half a turn.
What direction is he facing now? south

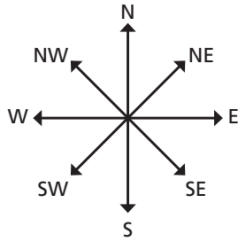
b) Whitney is facing east.
She turns 180°.
What direction is she facing now? west

c) Alex is facing west.
She turns a quarter turn clockwise.
What direction is she facing now? north

d) Amir is facing west.
He turns 90° anticlockwise.
What direction is he facing now? south

e) Kim is facing south.
What angle does she need to turn through to face east?
90° anti-clockwise or 270° clockwise
Is there more than one answer?

5 Here is another compass.



a) Dexter is facing north-east.
He turns half a turn.
What direction is he facing now? south-west

b) Esther is facing south-west.
She turns 270° anticlockwise.
What direction is she facing now? north-west

c) Mo is facing south-west.
He turns, and he is still facing south-west.
How many degrees did he turn through? 360°

6 Complete the statements.

a) $\frac{1}{2}$ of a full turn = 180°

b) $\frac{1}{4}$ of a full turn = 90°

c) $\frac{3}{4}$ of a full turn = 270°

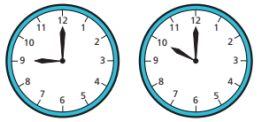
d) $1\frac{1}{4}$ turns = 450°

e) $5\frac{3}{4}$ turns = 2,070°

7

How many degrees did Eva turn through? 840°

8 Nijah looks at the clock at the start and at the end of her maths lesson.



start end

How many degrees did the minute hand turn through during the lesson? 360°

Lesson 1: Challenge

Which angle is the odd one out?

180°	45°	79°	270°

Could another angle be the odd one out for a different reason?

Always, sometimes or never true?

- If I turn from North-East to North-West, I have turned 90°
- If I turn from East to North-West, I will have turned through an obtuse angle.
- If I turn from South-West to South, my turn will be larger than 350°

Word of the day: adjacent angles

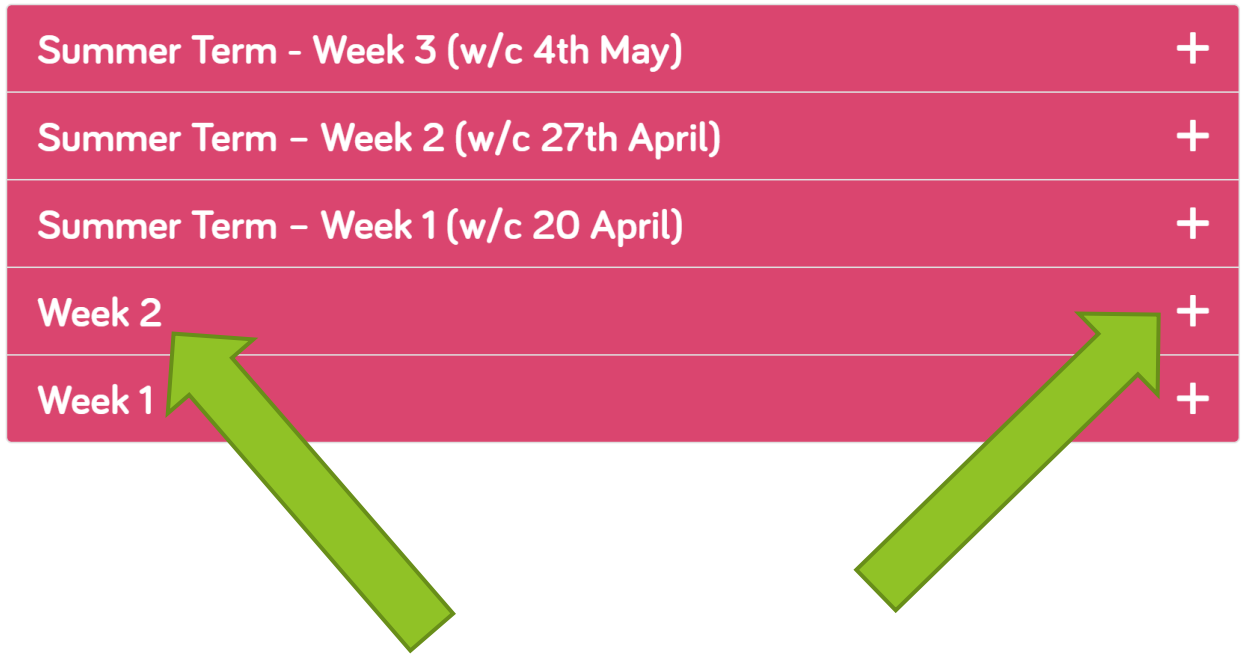
Lesson 2:Calculating angles

- In this lesson, we will look at calculating angles. We will identify adjacent angles and also calculate missing angles on a straight line.
- Follow the instructions on the next slide to find a corresponding video lesson.
- You will find a copy of the independent task, as referred to in the video, and additional challenges.

What do you call friends that love maths?
algebros

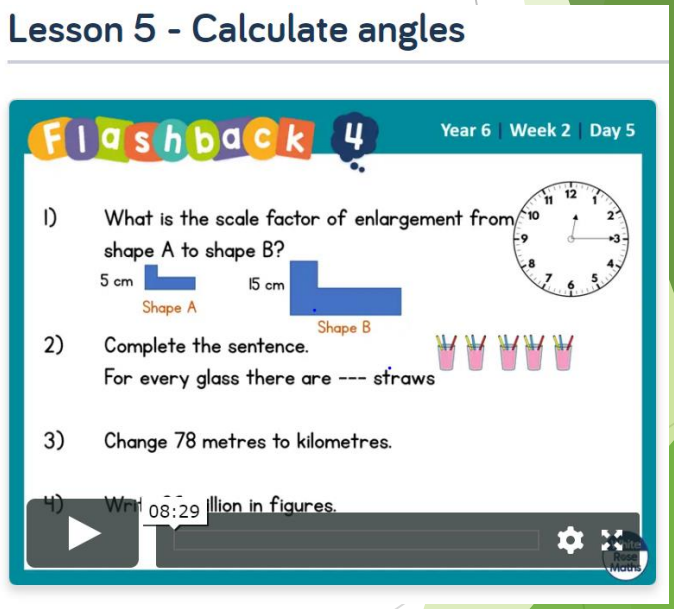
Click here for website, once open please follow the two steps below to find the correct lesson.

STEP 1



Open Week 2 by clicking the + symbol.

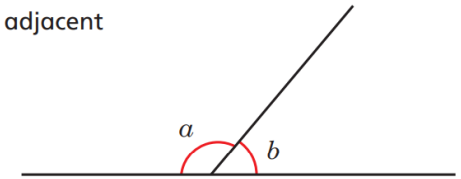
STEP 2



Find Lesson 5 – Calculate angles and watch the video as seen in the picture above.

Questions:

1 Two angles, a and b, are adjacent on a straight line.



a) Measure angles a and b.

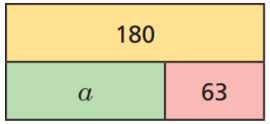
$a =$ ☐ $b =$ ☐

b) What is the total of the two angles? ☐

c) Complete the sentence.

Adjacent angles on a straight line _____

2 **a)** Complete the fact family for the bar model.



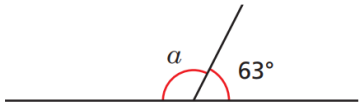
$a + 63 =$ ☐ $180 -$ ☐ $= a$

$63 +$ ☐ $=$ ☐ $180 - a =$ ☐

b) Tick the calculation in part a) that helps you work out the value of a.

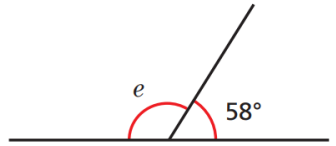
c) Work out the value of a. $a =$ ☐

d) How does the bar model help you to calculate angle a?



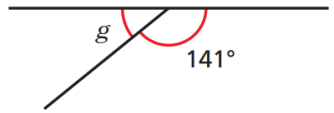
3 Work out the unknown angles.

a)



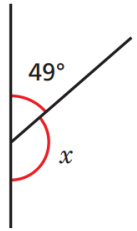
$e =$ ☐

b)



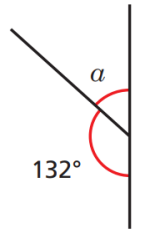
$g =$ ☐

c)



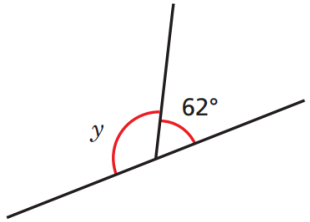
$x =$ ☐

d)



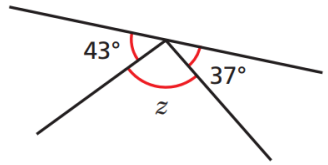
$a =$ ☐

e)



$y =$ ☐

f)



$z =$ ☐

Now resume the video

4 Dora is facing in the direction shown by the arrow.

She does a full turn clockwise.

Dora

a) Show Dora's turn on the diagram.

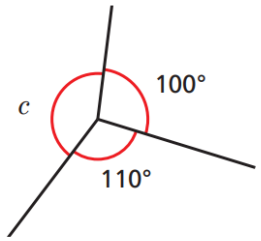
b) How many degrees did Dora turn through? ☐

c) Use your answer to part b) to help you complete the sentence.

Angles around a point _____

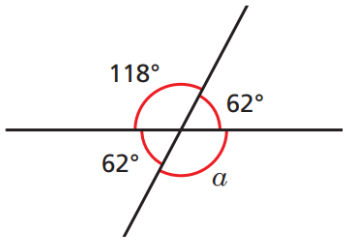
5 Work out the unknown angles.

a)



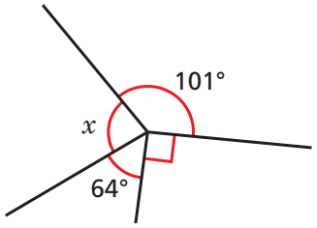
$c =$ ☐

c)



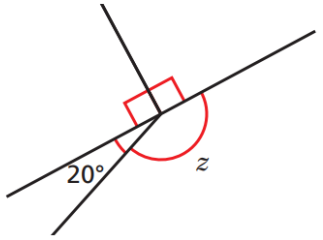
$a =$ ☐

b)



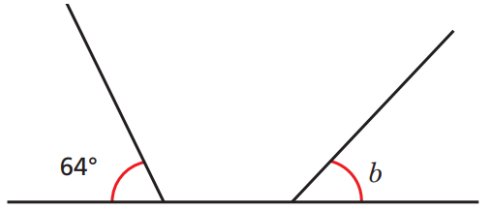
$x =$ ☐

d)



$z =$ ☐

6



Angle b is 116° because angles on a straight line add up to 180°.

Do you agree with Tommy? _____

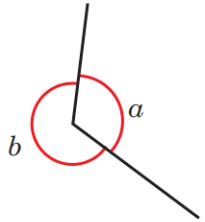
Explain your answer.

_____

_____

7 Use the information to work out the unknown angles.

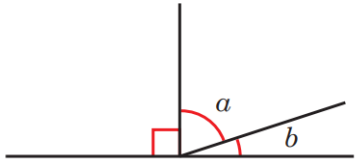
a) Angle a is half the size of angle b.



$a =$ ☐

$b =$ ☐

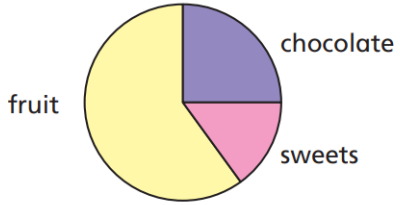
b) Angle a is four times the size of angle b.



$a =$ ☐

$b =$ ☐

8 The pie chart shows some children's favourite snacks.



A quarter of the children said chocolate was their favourite snack.

Five times as many children voted for fruit as voted for sweets.

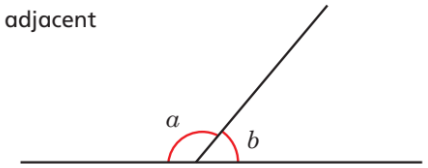
Work out the size of the angle for each sector in the pie chart.

chocolate ☐ sweets ☐ fruit ☐

Answers

Calculate angles

1 Two angles, a and b, are adjacent on a straight line.



a) Measure angles a and b.

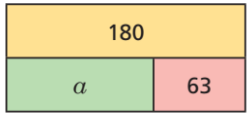
$a =$ 130° $b =$ 50°

b) What is the total of the two angles? 180°

c) Complete the sentence.

Adjacent angles on a straight line sum to 180°

2 **a)** Complete the fact family for the bar model.



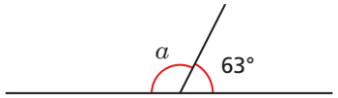
$a + 63 =$ 180 $180 -$ 63 $= a$

$63 +$ a $=$ 180 $180 - a =$ 63

b) Tick the calculation in part a) that helps you work out the value of a.

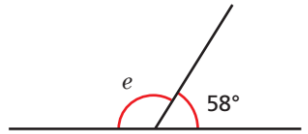
c) Work out the value of a. $a =$ 117

d) How does the bar model help you to calculate angle a?



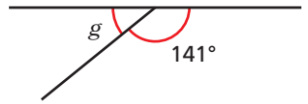
3 Work out the unknown angles.

a)



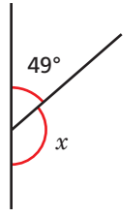
$e =$ 122°

b)



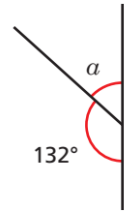
$g =$ 39°

c)



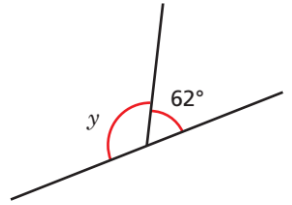
$x =$ 131°

d)



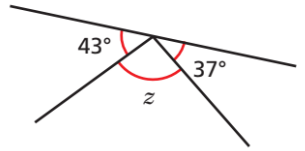
$a =$ 48°

e)



$y =$ 118°

f)



$z =$ 100°

4 Dora is facing in the direction shown by the arrow.

She does a full turn clockwise.

a) Show Dora's turn on the diagram.

b) How many degrees did Dora turn through? 360°

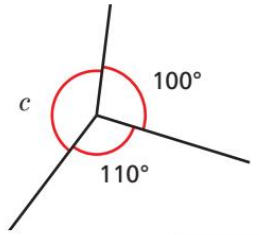
c) Use your answer to part b) to help you complete the sentence.

Angles around a point sum to 360°

Answers continued

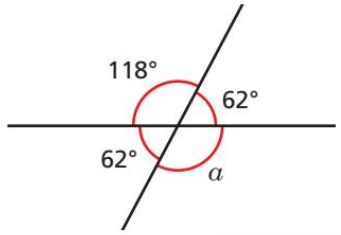
5 Work out the unknown angles.

a)



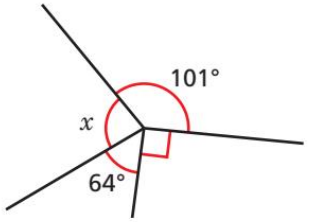
$c =$ 150°

c)



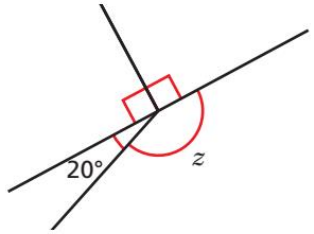
$a =$ 118°

b)



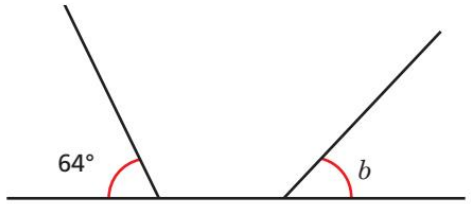
$x =$ 105°

d)



$z =$ 160°

6



Angle b is 116° because angles on a straight line add up to 180°.

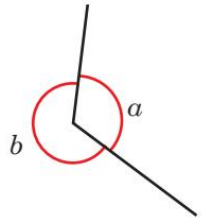
Do you agree with Tommy? No

Explain your answer.

The angles are not adjacent. There is not enough information to work out the size of angle b.

7 Use the information to work out the unknown angles.

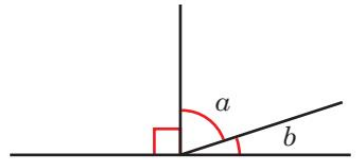
a) Angle a is half the size of angle b.



$a =$ 120°

$b =$ 240°

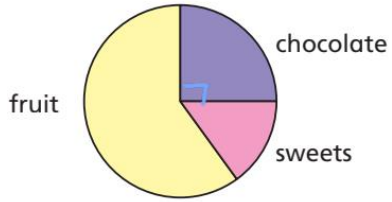
b) Angle a is four times the size of angle b.



$a =$ 72°

$b =$ 18°

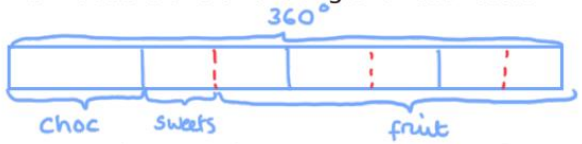
8 The pie chart shows some children's favourite snacks.



A quarter of the children said chocolate was their favourite snack.

Five times as many children voted for fruit as voted for sweets.

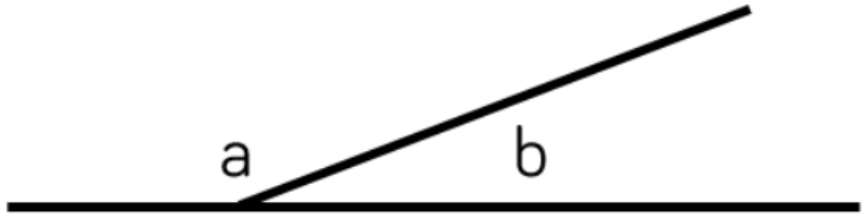
Work out the size of the angle for each sector in the pie chart.



chocolate 90° sweets 45° fruit 225°

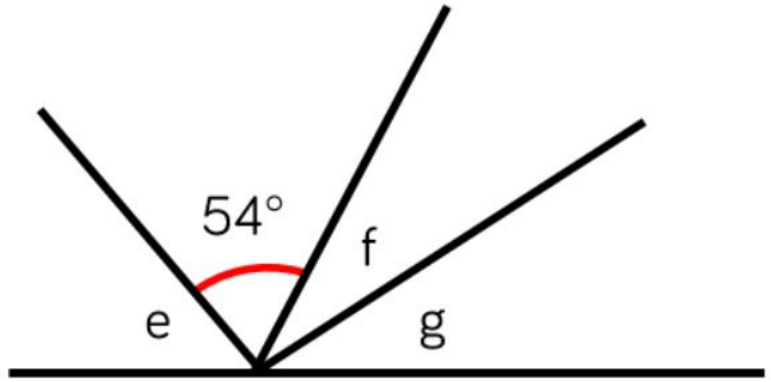
Lesson 2: Challenge

Here are two angles.



Angle b is a prime number between 40 and 50

Use the clue to calculate what the missing angles could be.



- The total of angle f and g are the same as angle e
- Angle e is 9° more than the size of the given angle.
- Angle f is 11° more than angle g

Calculate the size of the angles.

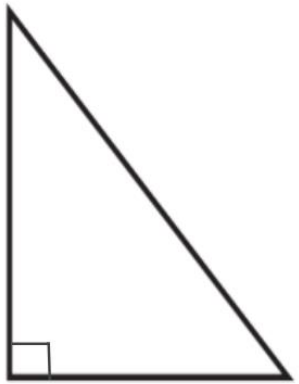
Lesson 3: Compare and classify triangles

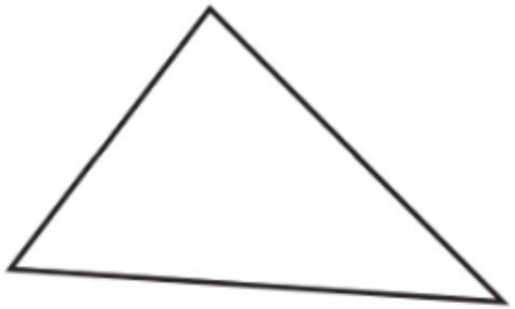
- In today's lesson, we will compare and classify triangles, looking at how to recognise the different types of triangles and the sum of the angles in a triangle.
- Click here and complete the pre lesson quiz and follow the instructions on the screen.
- You will find a copy of the independent task, as referred to in the video, and additional challenges.

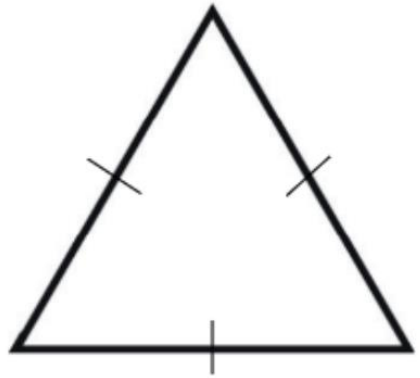
Why did the obtuse angle go to the beach?
Because it was over 90 degrees

Question 1

Match the triangle to the correct name. One of the triangles will point to two names.







Scalene

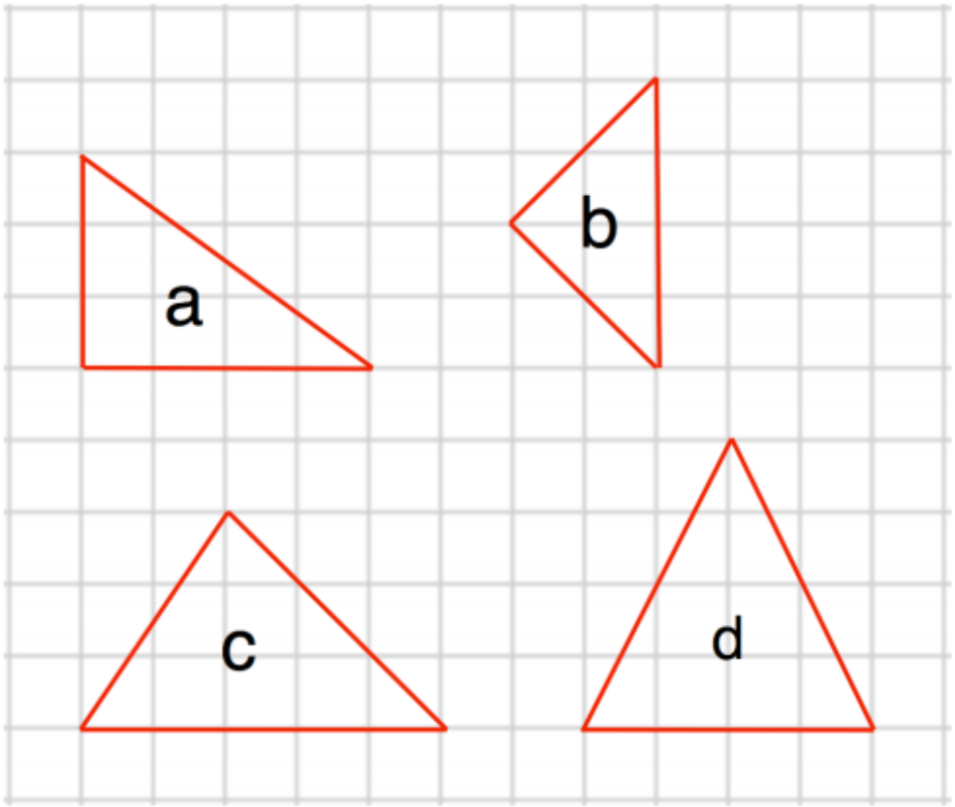
Equilateral

Right angle

Isosceles

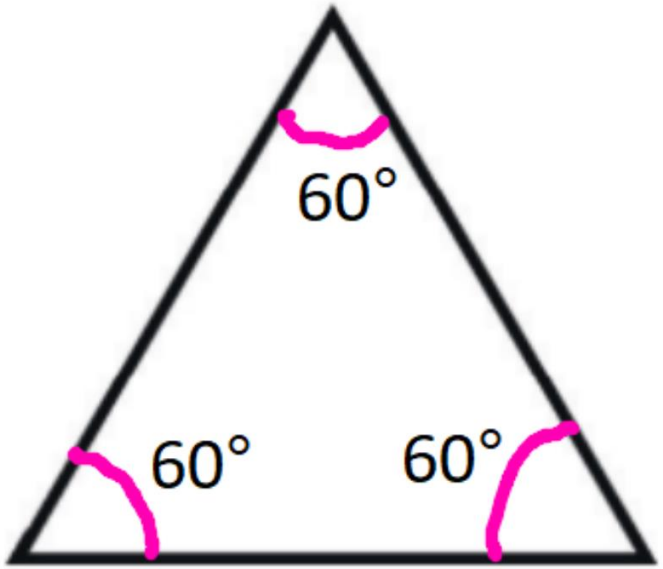
Question 2

Write the letters of the two isosceles triangles.



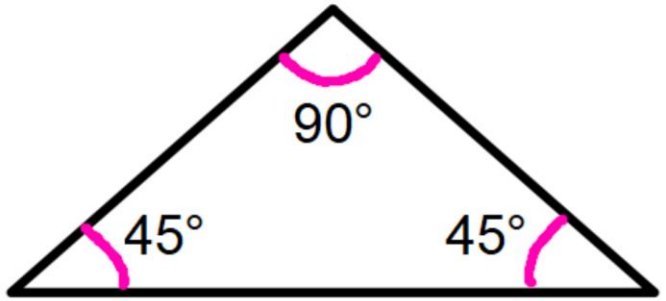
Question 3

What type of triangle is shown?



Question 4

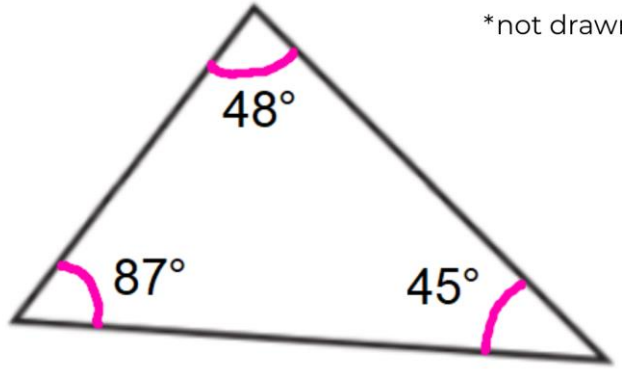
What type of triangle is shown?



Question 5

What type of triangle is shown?

*not drawn to scale



Question 6

Fatma says:

"I have drawn a triangle with one acute angle, one right angle and one obtuse angle."

Explain why she is incorrect.

Lesson 3: Challenge

a)

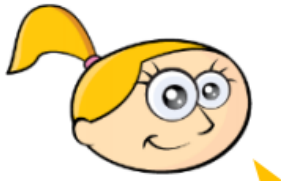
Amir says,

My triangle has two 90° angles.

Can Amir be correct? Can you demonstrate this?

b)

Eva says,



My triangle is a scalene triangle. One angle is obtuse. One of the angles measures 56° The obtuse angle is three times the smallest angle.

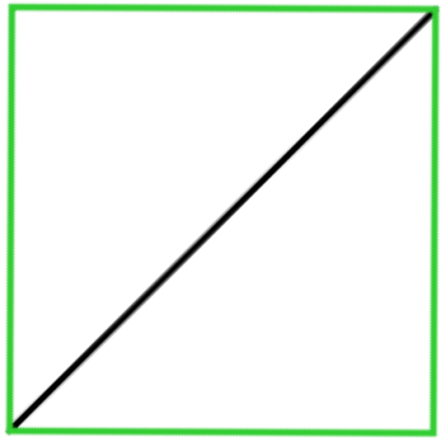
Work out the size of each of the angles in the triangle.

Lesson 4: Compare and classify quadrilaterals

- In today's lesson, we will classify different types of quadrilateral and learn about the sum of their internal angles.
- Click here and complete the pre lesson quiz and follow the instructions on the screen.
- You will find a copy of the independent task, as referred to in the video, and additional challenges.

What did the triangle say to the circle?
You're pointless!!

Question 1

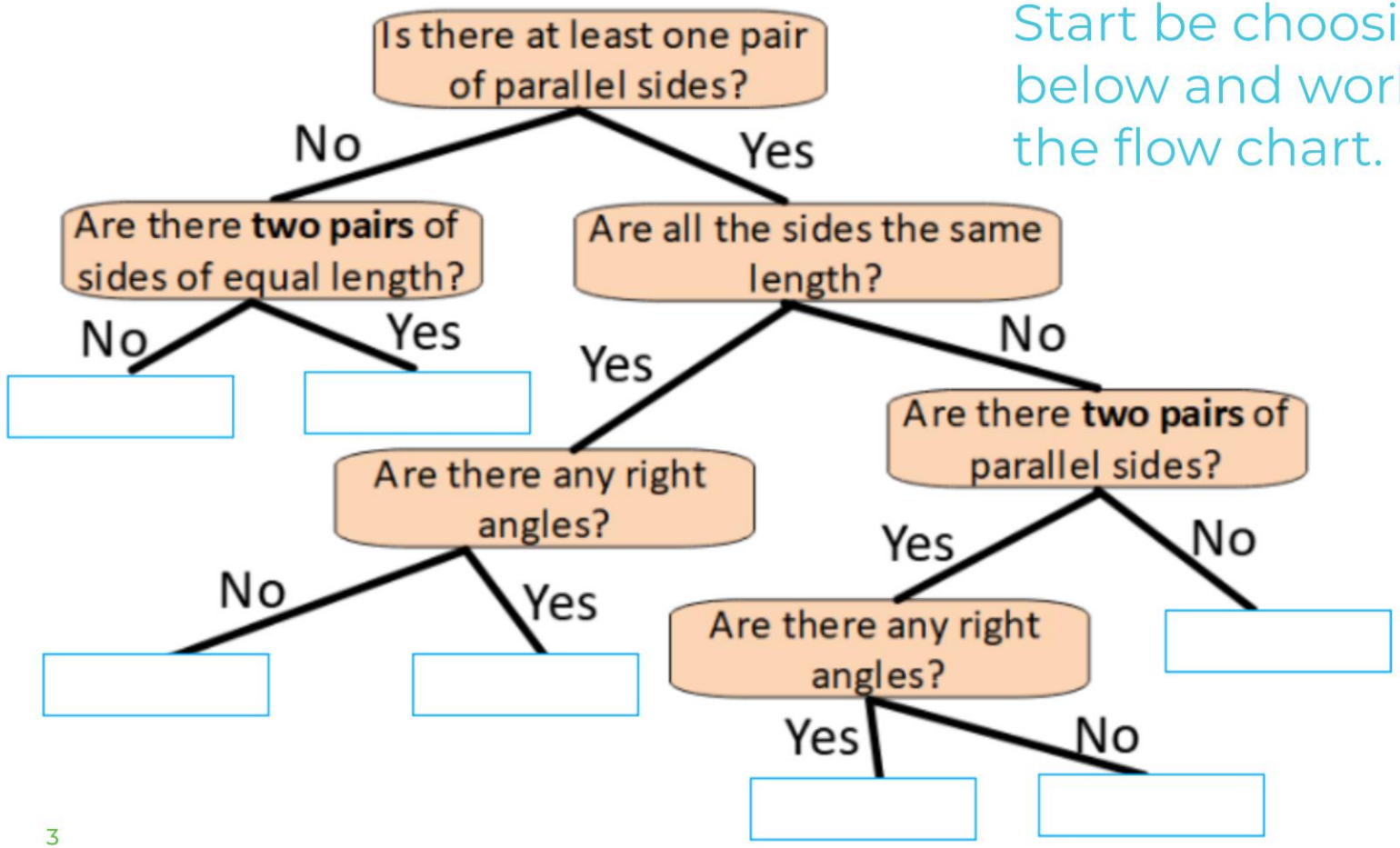


How does this representation of a square help us to reason about the sum of its internal angles?

Question 2

Fill in the blank boxes in the flow chart.

Start be choosing a shape from below and working your way down the flow chart.



- Trapezium
- Parallelogram
- Rectangle
- Kite
- Square
- Rhombus
- Quadrilateral with no special properties

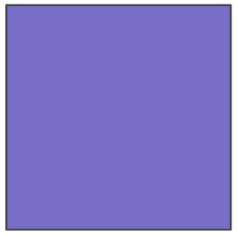
Question 3

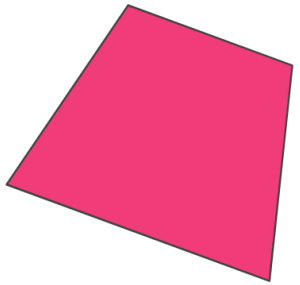
Each of these quadrilaterals have a perimeter of 16 cm.
Complete the table below to show the possible length of each side.

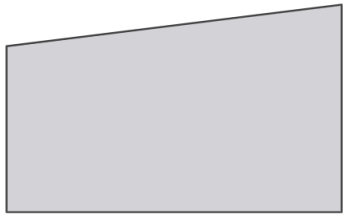
	Side lengths			
Square				
Rectangle				
Rhombus				
Parallelogram				
Kite				
Trapezium				

Question 4

Name the shapes below and list their properties.

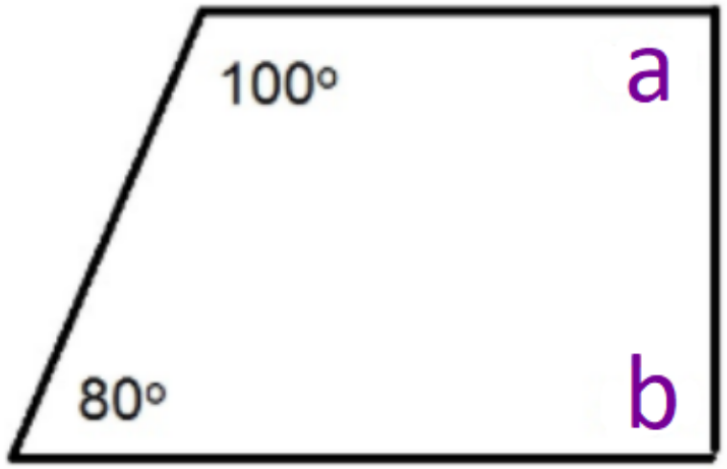


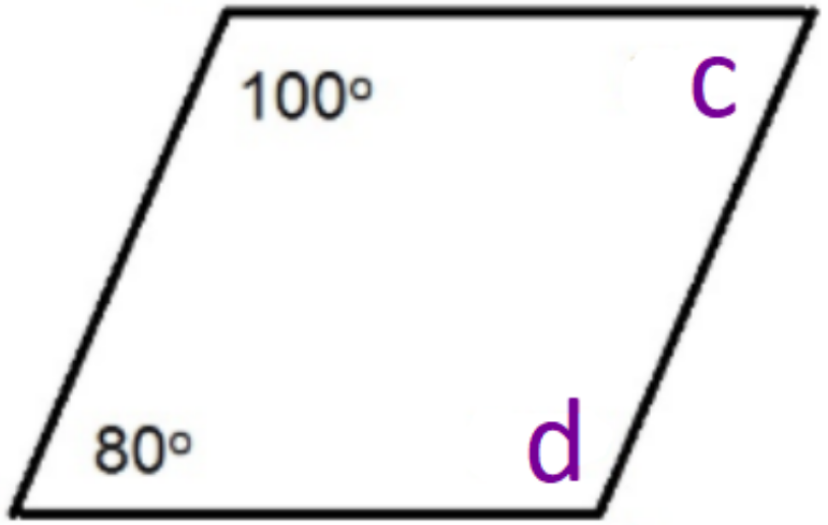




Question 5

Use your knowledge of quadrilaterals to find the value of the missing angles in the shapes below.





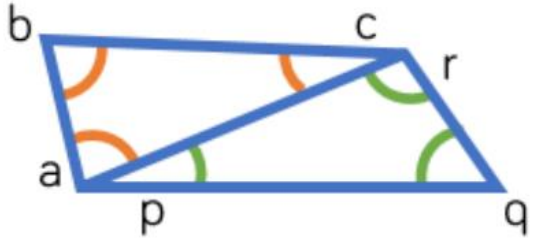
Lesson 4: Challenge

Jack says,

All quadrilaterals have at least one right angle.

Draw two different shapes to prove Jack wrong. Measure and mark on the angles.

This quadrilateral is split into two triangles.



Use your knowledge of angles in a triangle to find the sum of angles in a quadrilateral.

Split other quadrilaterals into triangles too. What do you notice?

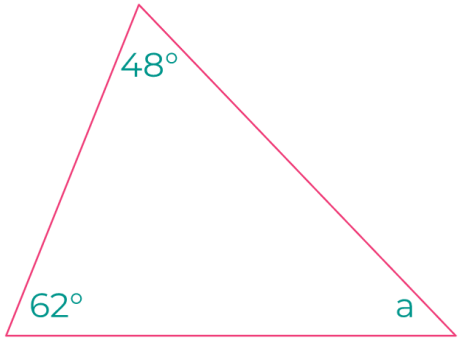
Lesson 5: Find unknown angles in triangles

- In today's lesson, we will represent the angles in a triangle pictorially and algebraically before learning how to calculate missing angles.
- Click here and complete the pre lesson quiz and follow the instructions on the screen.
- You will find a copy of the independent task, as referred to in the video, and additional challenges.

Did you hear about the Mathematician who was scared of negative numbers?
He would stop at nothing to avoid them

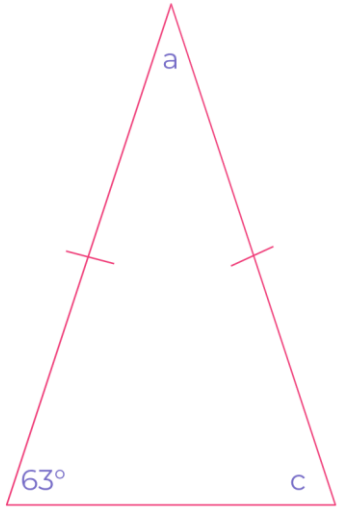
Question 1

Calculate the value of angle a.



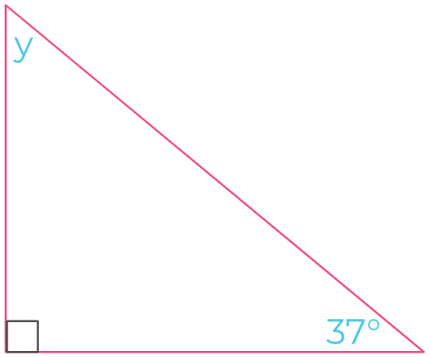
Question 2

Calculate the value of angles a and c.



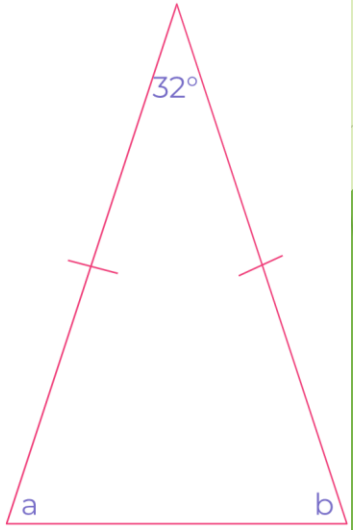
Question 3

Calculate the value of angle y.

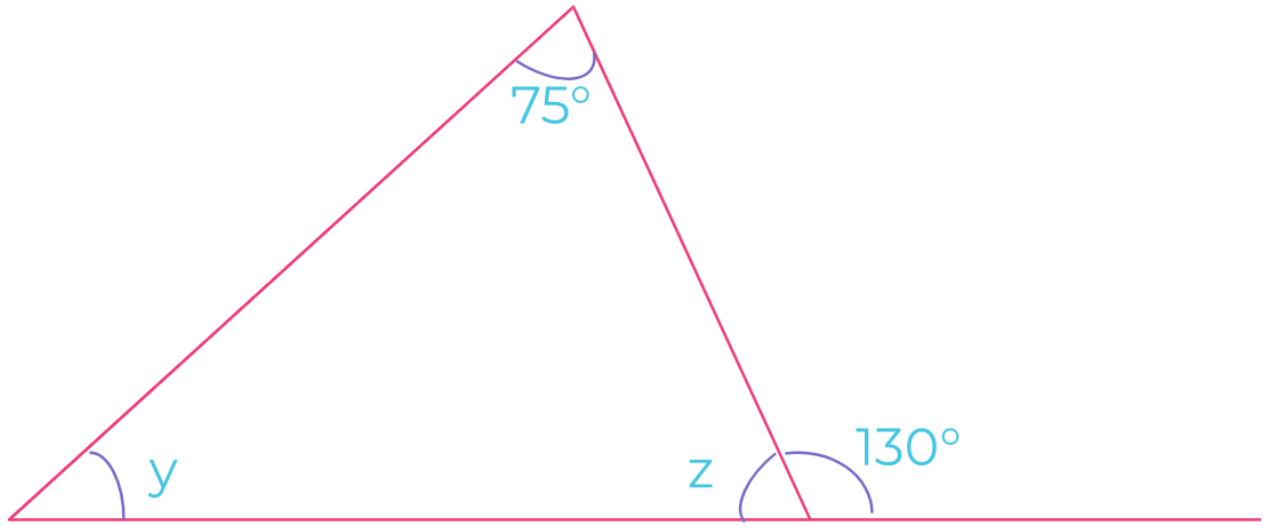


Question 4

Calculate the value of angles a and b.



Question 5

Calculate the value of angles y and z.

Hint: start off by finding the value of angle z.