June 6, 2020

Year 6

Academic Year: 2019 - 2020

Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | **Year 6**

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition, Subtraction, Multiplication and Division				Number: Fractions				Geometry: Position and Direction	Consolidation
Spring	Number: Decimals		Number: Percentages		Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio		Consolidation
Summer	Geometry: Properties of Shape		Problem Solving			Statistics		Investigations				Consolidation

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Summer 2020

Monday 8th June 2020 - Friday 17th July 2020

Summer	Geometry: Properties of Shape	Problem Solving	Statistics	Investigations	Consolidation

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Summer II 2020

Learning Content for Weekly Planning

Overview

Small Steps

- Measure with a protractor
- Introduce angles
- Calculate angles
- Vertically opposite angles
- Angles in a triangle
- Angles in a triangle – special cases
- Angles in a triangle – missing angles
- Angles in special quadrilaterals
- Angles in regular polygons
- Draw shapes accurately
- Draw nets of 3-D shapes

NC Objectives

Draw 2-D shapes using given dimensions and angles.

Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Week 1: 08.06.20 - 12.06.20

Week 2: 15.06.20 - 19.06.20

Week 3: 22.06.20 - 06.05.20

Summer I (Week I): 20.04.20 - 24.04.20

Monday 8th June 2020 (08.06.20)
LO: understand the purpose of a use protractor to read and measure angles correctly.

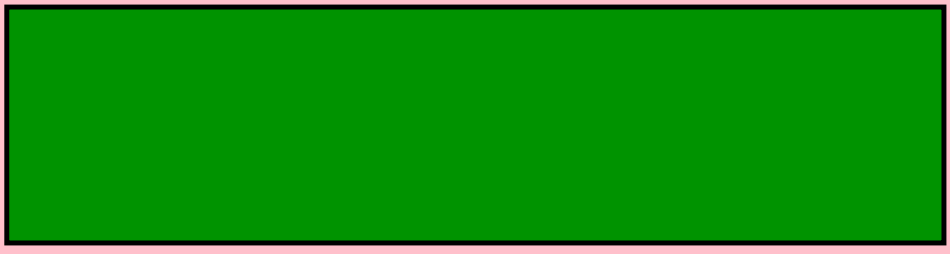
Tuesday 9th June 2020 (09.06.20)
LO: understand the purpose of a use protractor to read and measure angles correctly.

Wednesday 10th June 2020 (10.06.20)
LO: to calculate missing angles on a straight line and on a point, using angle sum knowledge.

Thursday 11th June 2020 (11.06.20)
LO: to calculate missing angles at a point, using angle sum knowledge.

Friday 12th June 2020 (12.06.20)
LO: to know that angles that are opposite to each other are always equivalent in size.

Remember what these mean?



08.06.20

LO: understand the purpose of a use protractor to read and measure angles correctly.

Success Criteria

- To understand the markings on a protractor.
- To use a protractor to read angles correctly.
- To use a protractor to measure angles correctly.

Vocabulary

- protractor
- angles
- measurement
- degrees

Starter Tasks:

- 'green pen' task
- arithmetic practice

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Arithmetic

Copy these questions into your book and answer them

(NB: you may not need to show your working out for every question).

1) 9838 + 3724 =

2) 10385 - 8639 =

3) 78 x 94 =

4) 2,340 divided by 36 =

5) 7767 - 483 = 2020 +

QUESTION

How many different types of angles are there?
(hint: think back to what you may have learnt in Year 4 and 5)

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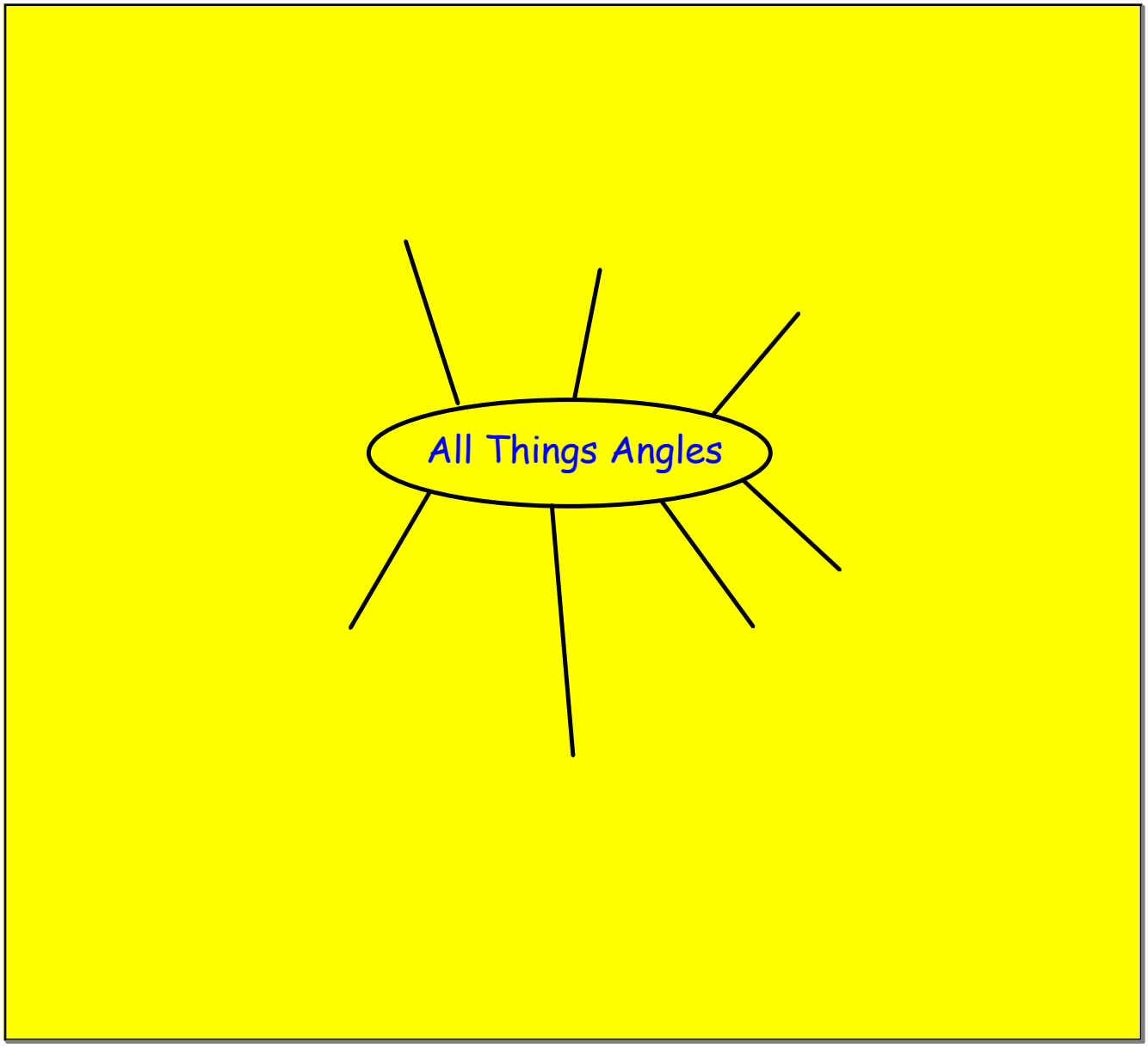

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Do you know any rules or knowledge about the size of the angles below?

ACUTE = angles that measure < 90°

RIGHT-ANGLE = angle that measures exactly 90°

OBTUSE = angle that measures between 91° and 180°

REFLEX = angles that measure > 180°

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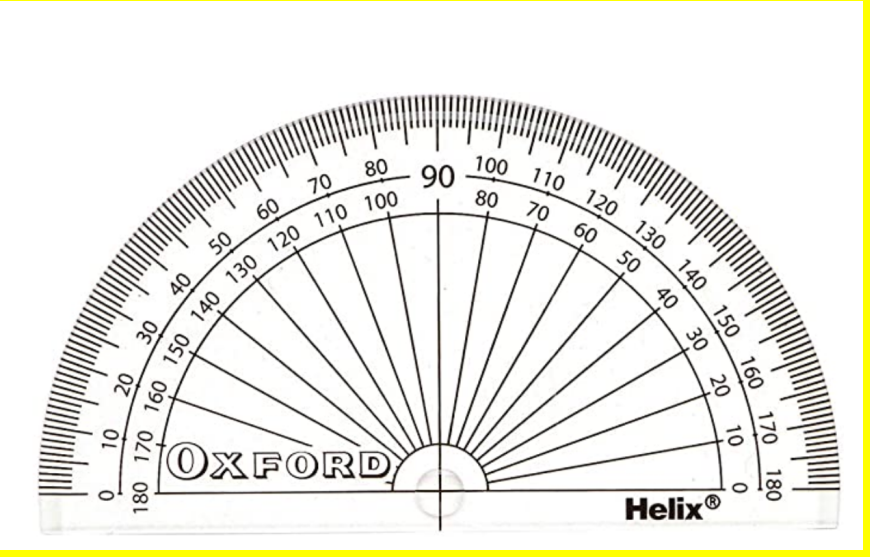
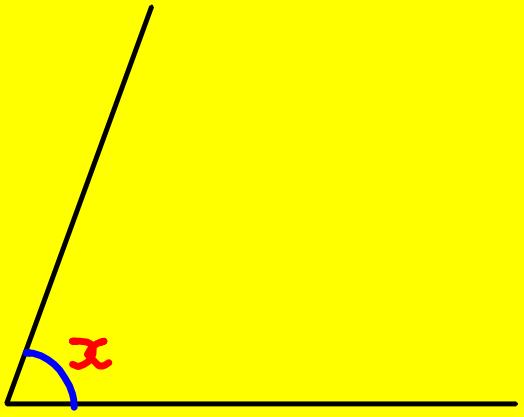


TASK 1:

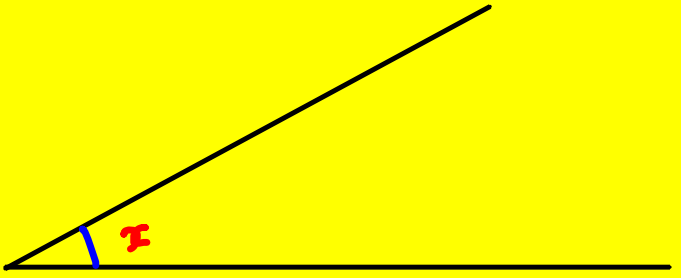
How do we use a protractor to measure an angle?

Take turns with your partner to explain how YOU think a protractor is used to measure the following angles.



How did you measure this angle?

- Think about where you placed the protractor
- Think about which scale you read the angle from
- Think about what 'type' of angle it looks like



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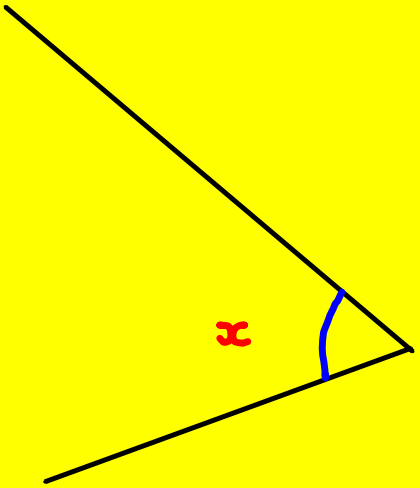

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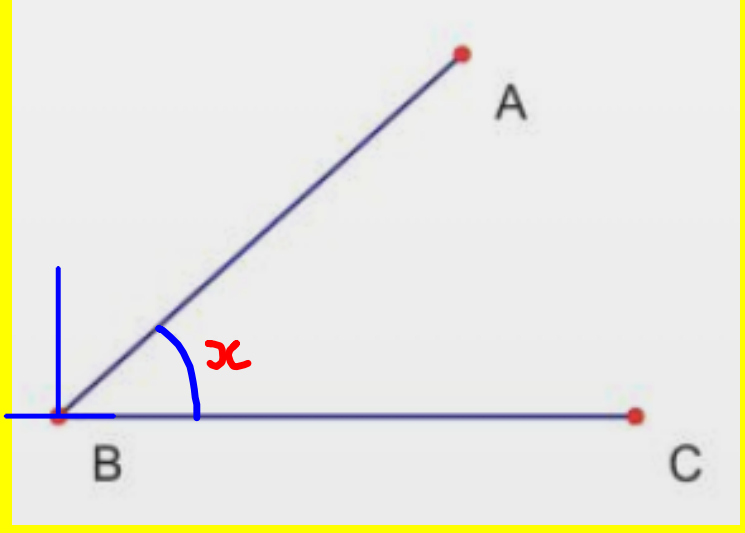
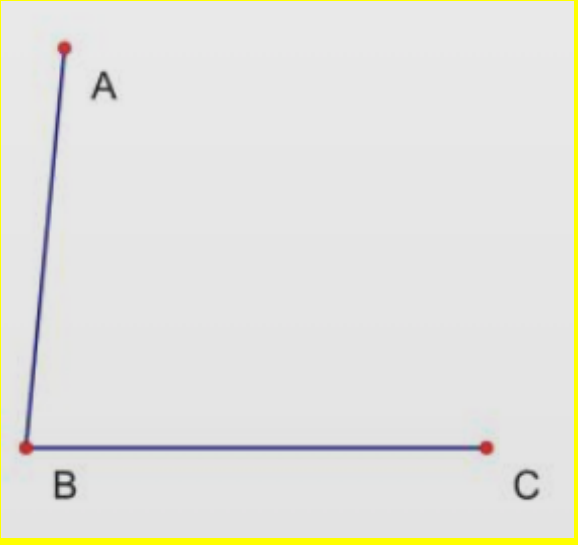


Step I - place the upside down 'T' where the angle has been created.

Step II - place the horizontal line on the straight line so that it matches up.

Step III - use the correct scale and read the size of the angle (hint: what type of angle SHOULD it be).



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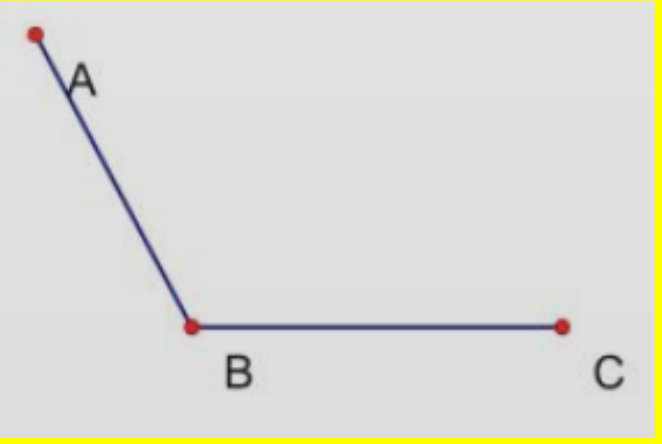

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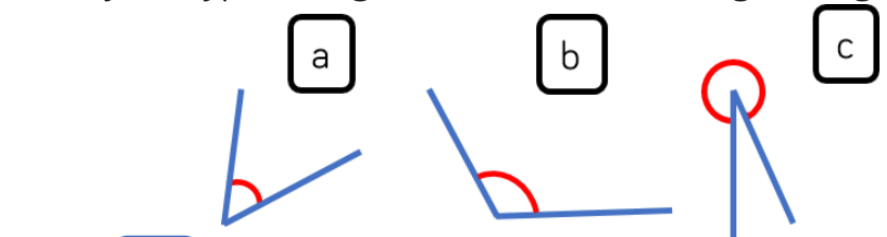
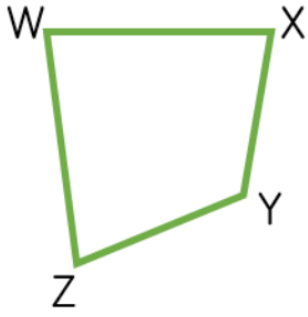
Identify the type of angle, and measure the angle using a protractor.



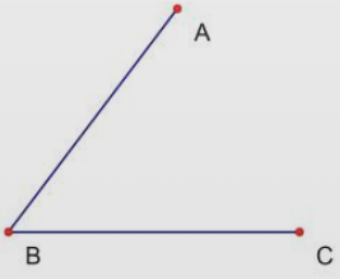
Angle ☐ is an ☐ angle. It measures ☐

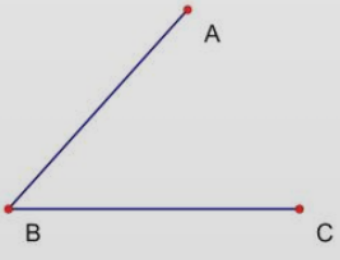
Estimate, then measure each of the angles at the vertices of the quadrilateral.



W: ☐ X: ☐

Y: ☐ Z: ☐

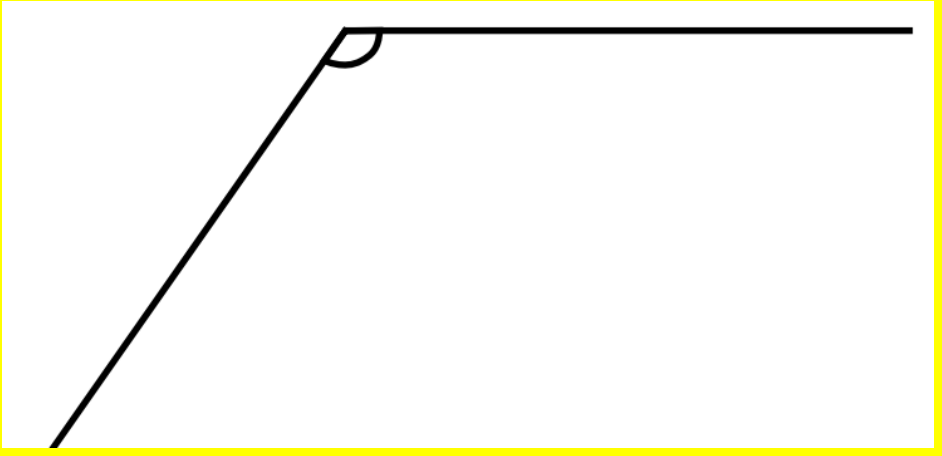




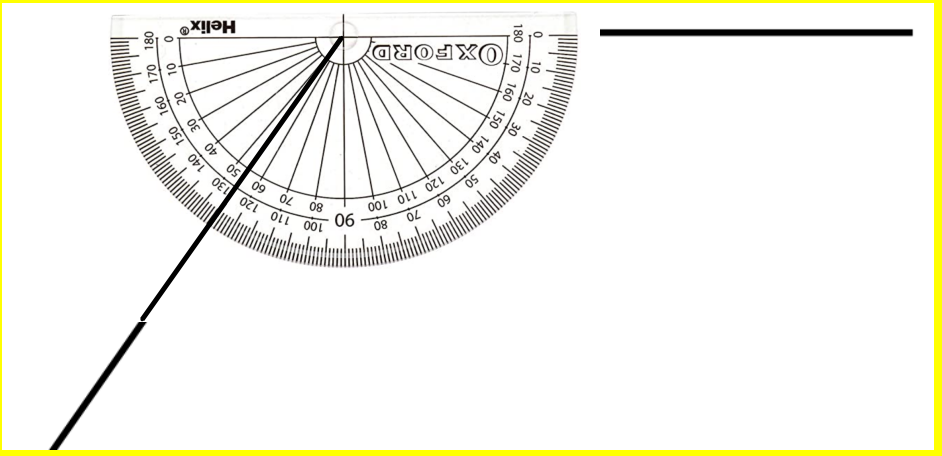
Step I - place the upside down 'T'

Step II - match horizontal line to straight line.

Step III - use the correct scale and read the size of angle



Where would you place the protractor to read and measure this angle?



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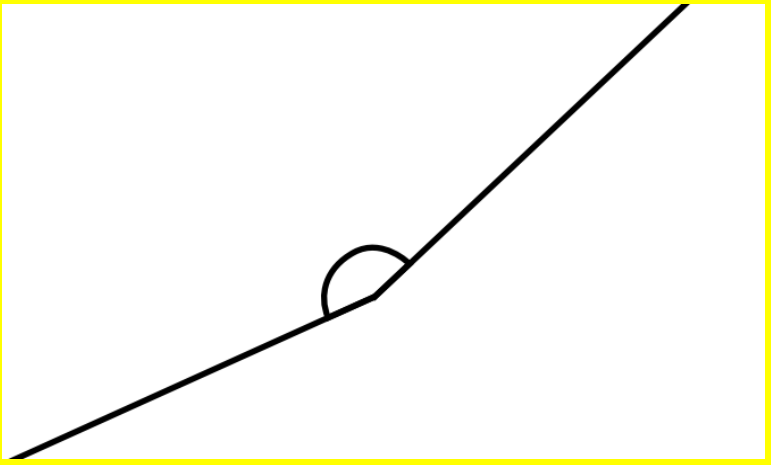

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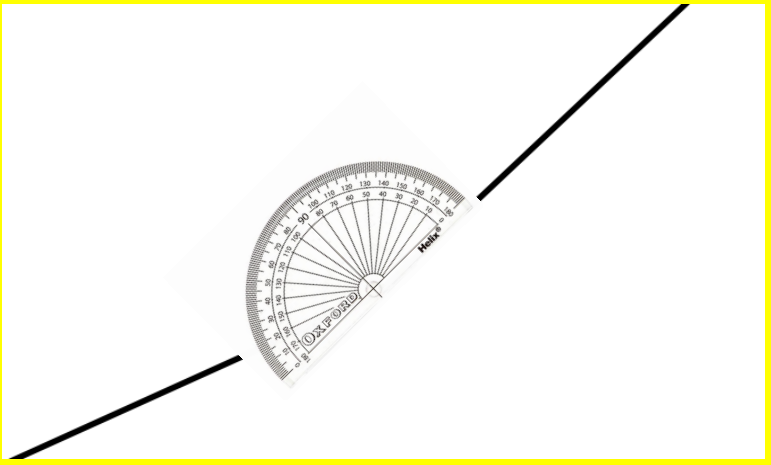

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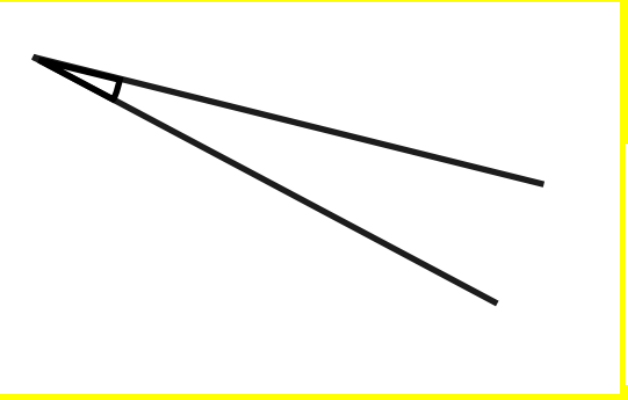
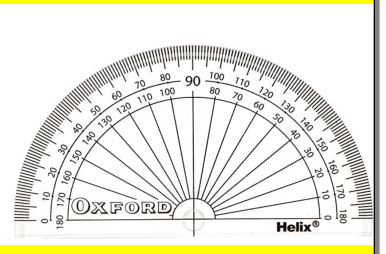
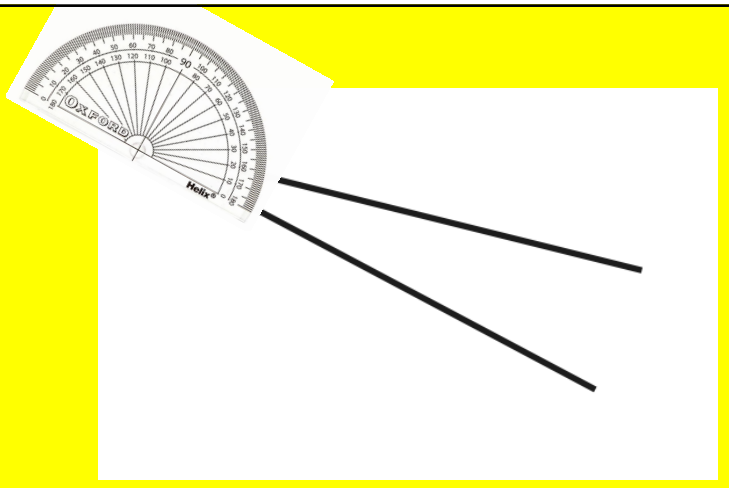




Where would you place the protractor to read and measure this angle?



Where would you place the protractor to read and measure this angle?

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Independent Learning:

1. Complete questions on measuring angles and drawing specific angles. 

2. Complete 'green' questions (make sure you explain your answer). 

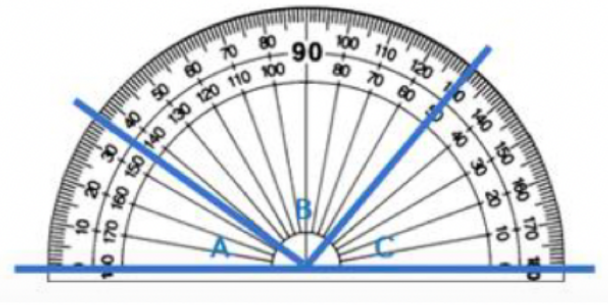
3. Complete 'light blue' questions 

4. Complete 'dark blue' questions. 

How can we solve this question?

What mathematical knowledge can we use to help us?

Work out the size of angle A, B and C



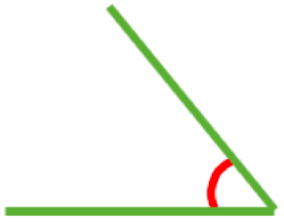
Explain how you found each of your answers

What do you notice that sum of angle A, B and C is?

How can we solve this question?

What mathematical knowledge can we use to help us?

Sophie measures the angle below:



She says it is 130°.

Explain what mistake she may have made when measuring.

How could you prove that Sophie is wrong?

Do you need to measure the angle to know what it is worth?

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09.06.20

LO: understand the purpose of a use protractor to read and measure angles correctly.

Success Criteria

- To understand the markings on a protractor.
- To use a protractor to read angles correctly.
- To use a protractor to measure angles correctly.

Vocabulary

- protractor
- angles
- measurement
- degrees

Starter Tasks:

- 'green pen' task
- arithmetic practice

June 6, 2020

Arithmetic

Copy these questions into your book and answer them

(NB: you may not need to show your working out for every question).

1) 106557 + 32724 =

2) 485493 - 54339 =

write your answer in words, too

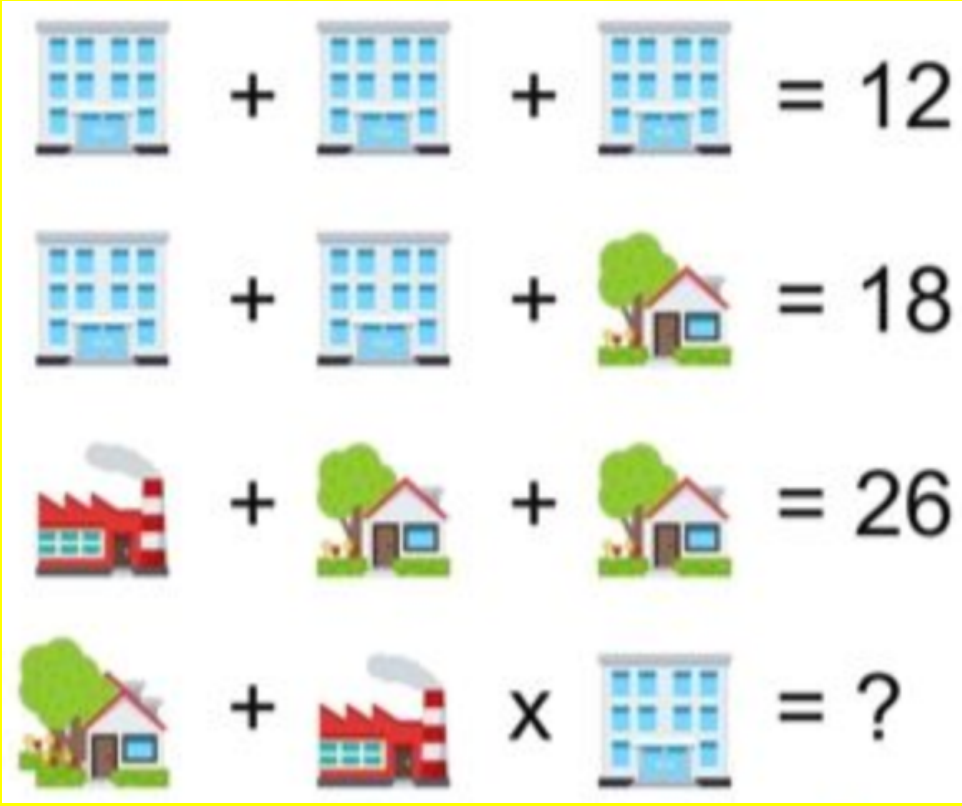
3) 123 x 66 =

4) 4,590 divided by 45 =

5) 85949 + ☐ = 1,000,000 - 12948

write your answer in words, too

Maths Puzzle (while you wait)...



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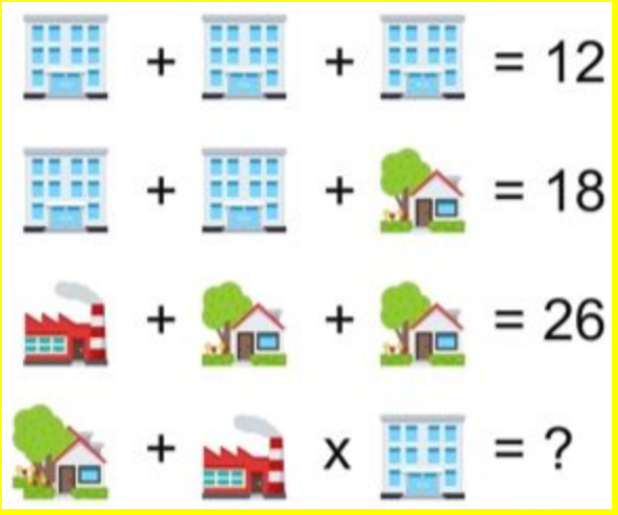

= 4

= 10

= 6

20 + (6 x 4) = 44

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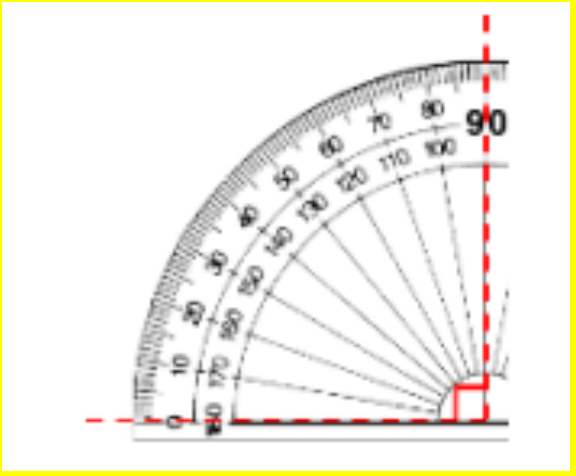
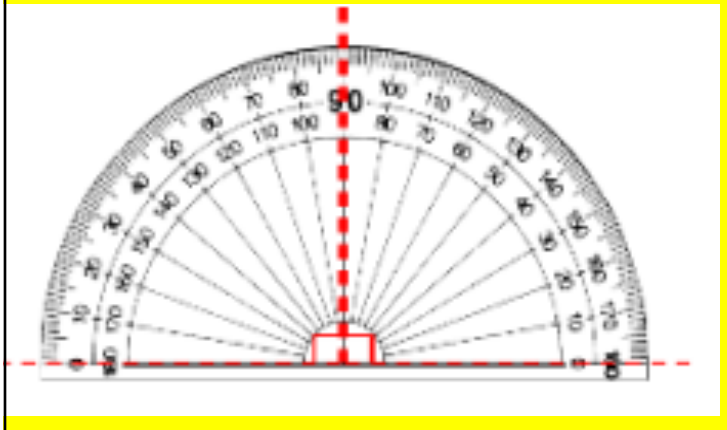


How many degrees are in a right angle?

How do you know?



How many degrees are on a straight line?

How do you know?

How else can this be said?

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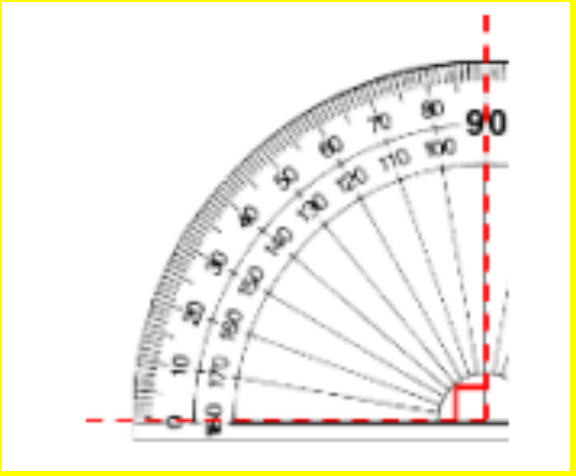

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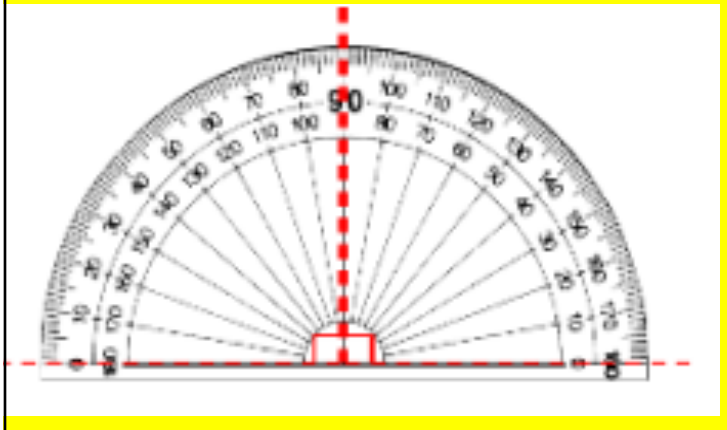

How many degrees are on a straight line?

How do you know?

How else can this be said?

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Angle	Fraction of a full turn	Degrees
Right angle	$\frac{1}{4}$	90°
Straight line		
Three right angles		
Full turn		

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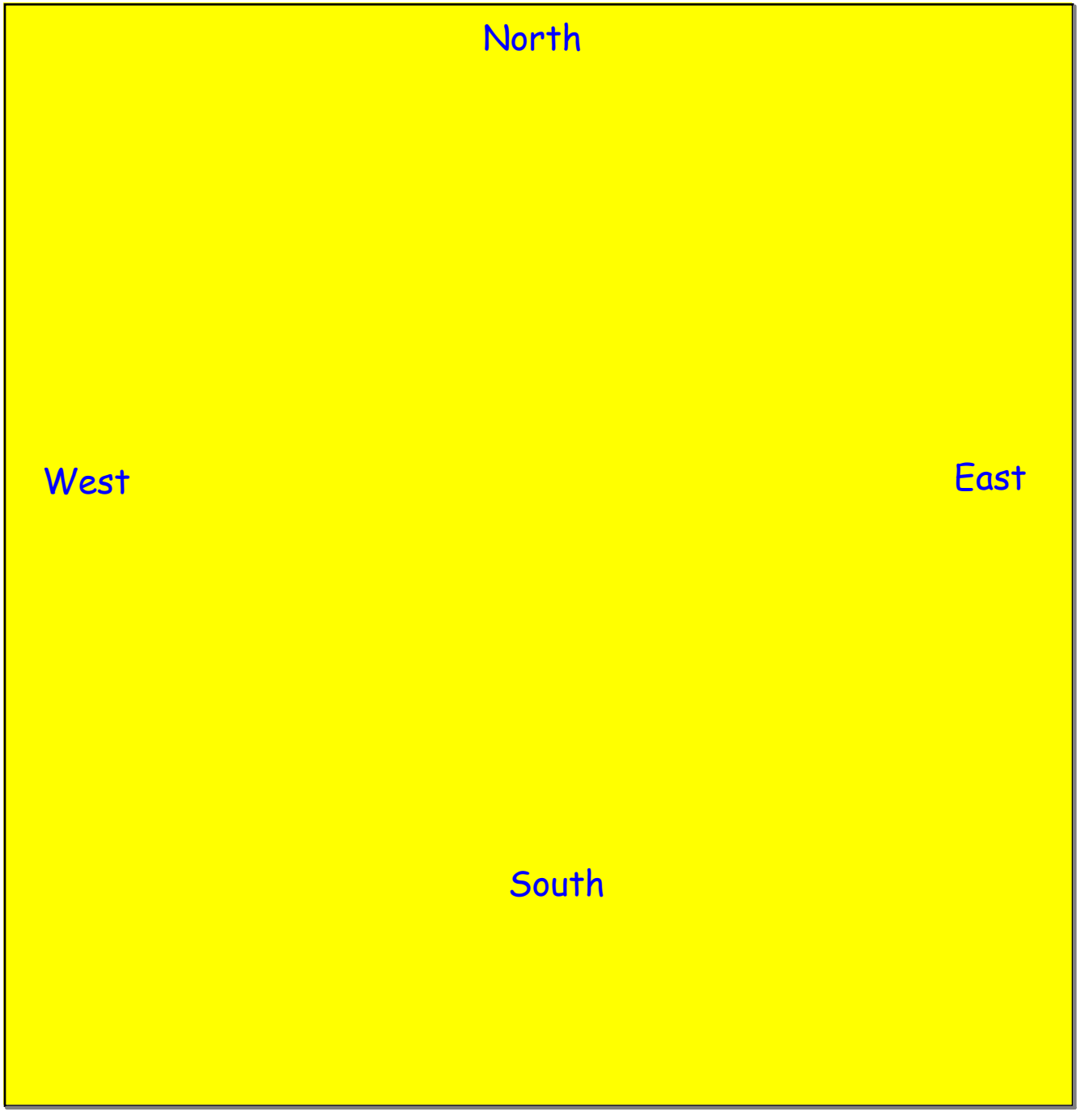

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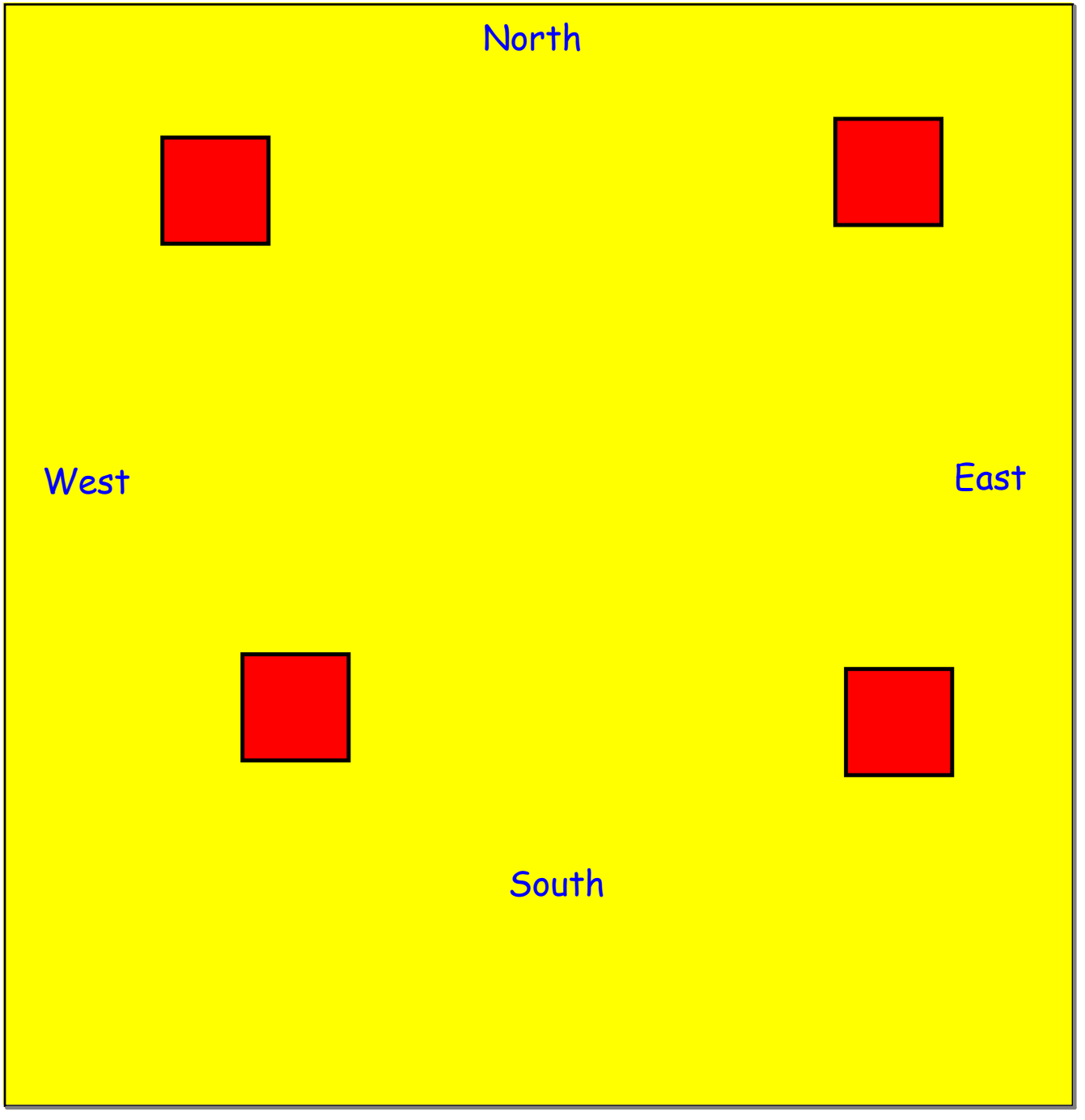

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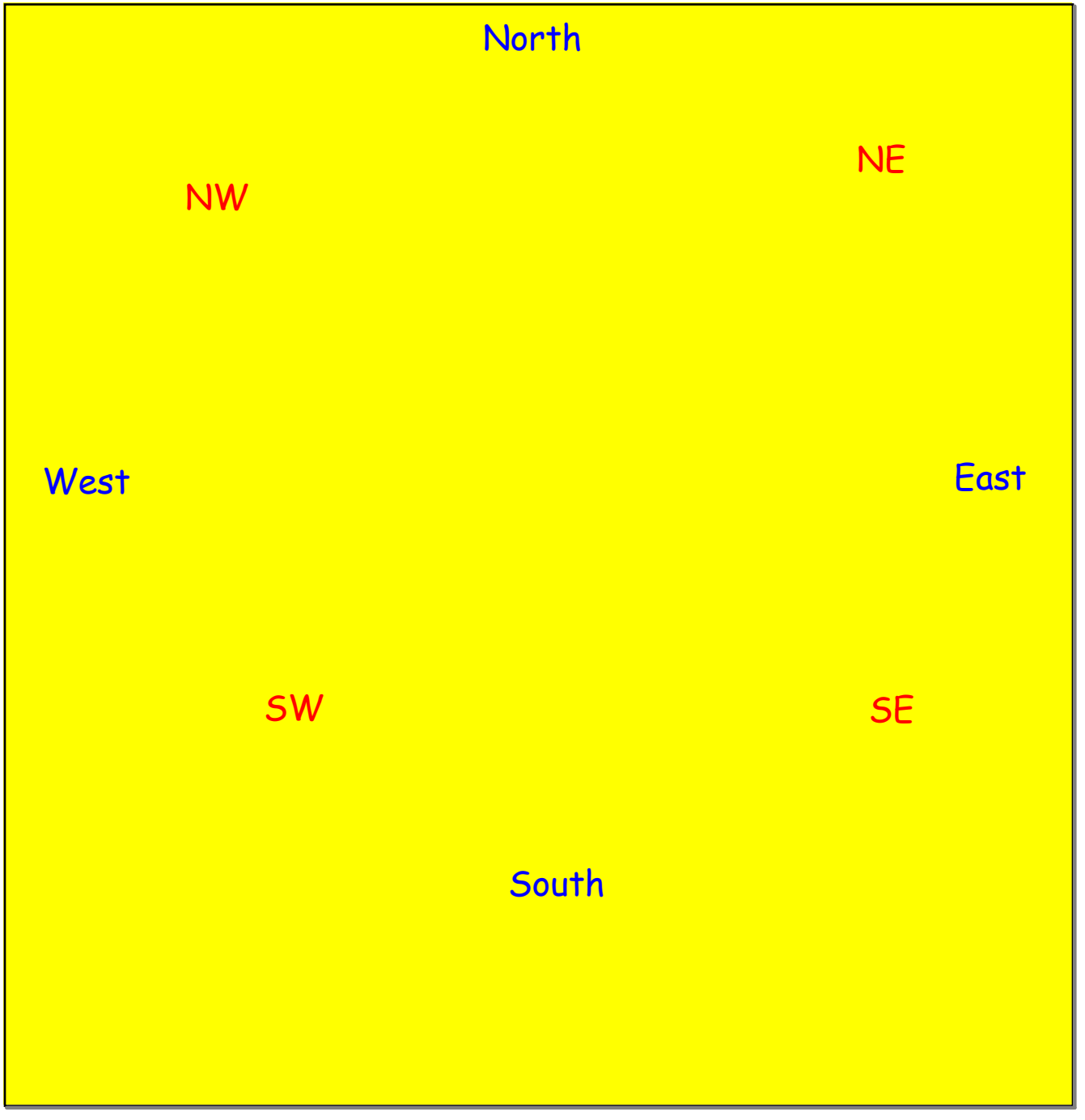


TASK

Use the compass markings to complete the description about turns and angles.

North

NW

NE

West

East

SW

SE

South

How can we solve this question?

How can we illustrate each child's statement?

Dora and Eva have been asked to calculate how many degrees there are between North West and South-West.

Dora says,

There are 90 degrees between NW and SW.

Eva says,

There are 270° between NW and SW.

Who do you agree with? Explain your reasoning.

Why do you think they have different answers?

How can we solve this question?

What does it mean for something to be 'ALWAYS THE CASE'?

Look at the following statements:

W to S = 90 degrees
NE to SW = 180 degrees
E to SE in a clockwise direction > 90°

Is it **always the case**, **sometimes the case** or **never the case** that they are correct?

Explain your mathematical reasoning.

Can we move from one direction to another using a different method?

How can we solve this question?

How can we show that NE to SE is 90 degrees?

Dora has said there is a 90° turn from NE – SE.

Is she correct? Explain your reasoning.

How many different 90° turns can you find from the compass markings underneath?
(**hint**: think about going clockwise and anti-clockwise)

Can we move from one direction to another using a different method?

11.06.20

LO: to calculate missing angles on a straight line, using angle sum knowledge.

Starter Tasks:

- 'green pen' task
- arithmetic practice

Success Criteria

- To know that angles on a straight line = 180°
- To know that angles on a point = 360°
- To calculate missing angles using the knowledge above

Vocabulary

- protractor
- angles
- measurement
- degrees
- straight line
- acute, reflex, obtuse
- right angle
- on a point

June 6, 2020

Arithmetic

Copy these questions into your book and answer them

(NB: you may not need to show your working out for every question).

1) 2/5 + 3/4 =

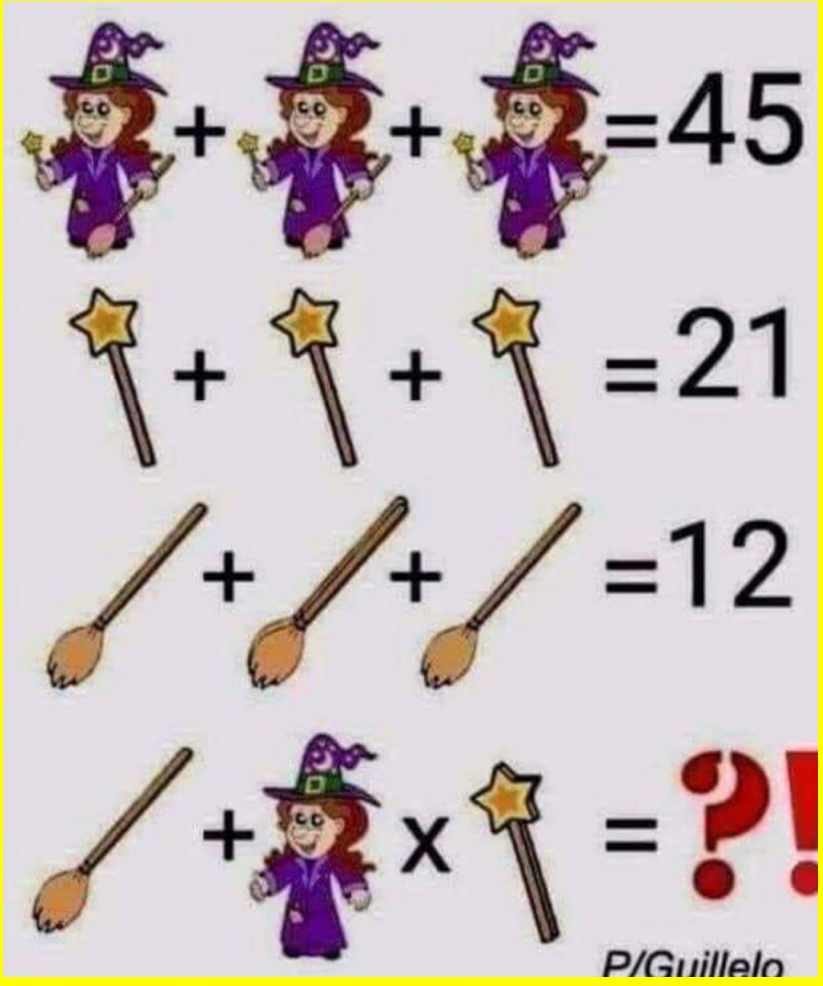
2) 9/12 - 1/8 =

3) 2 and 3/5 - 1 and 1/3 =

4) 4/9 divided by 2 =

5) 2/6 x 3/4 =

Maths Puzzle (while you wait)...



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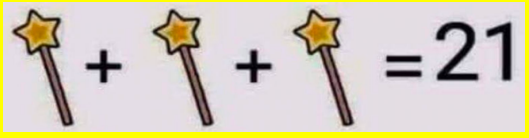
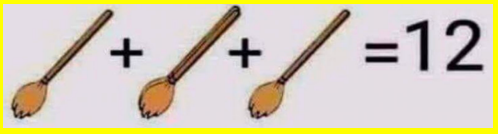


= 7



= 3

...there's two stars

3 + (5 x 14) = 73

15 + 15 + 15 = 45

...but because

15 - 7 - 3 = 5 =

ACUTE

angle that measures between 91° and 180°

angle that measures exactly 90°

angles that measure < 90°

OBTUSE

RIGHT-ANGLE

REFLEX

angles that measure > 180°

ACUTE angles that measure < 90°

RIGHT-ANGLE angle that measures exactly 90°

OBTUSE angle that measures between 91° and 180°

REFLEX angles that measure > 180°

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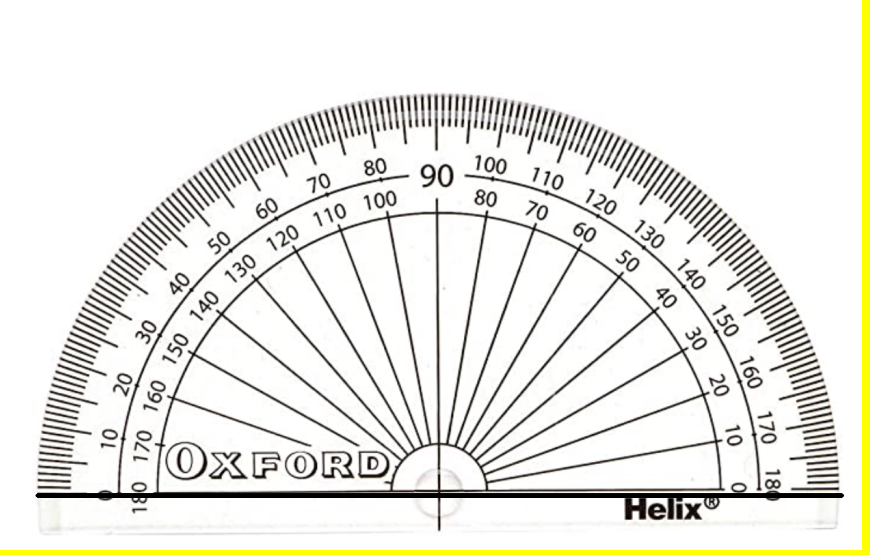


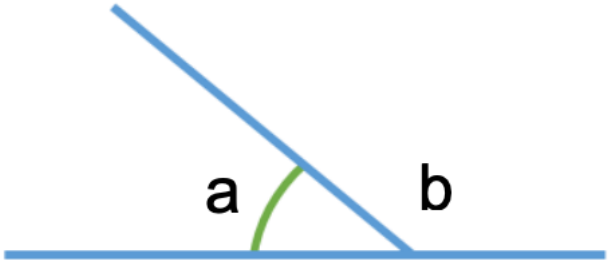
What is the size of the angle on the straight black line?
How do you know?

$a + b = \square$

$b + a = \square$

$\square - a = b$

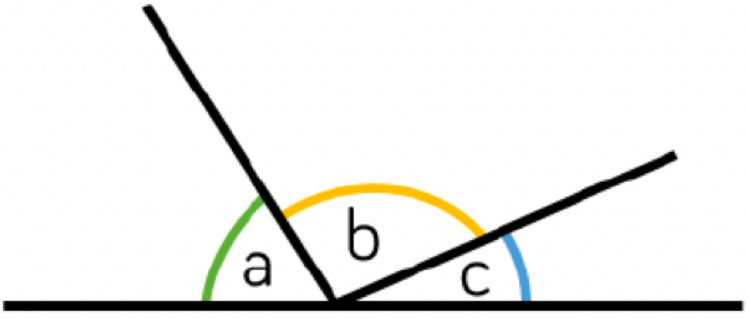
$\square - b = a$



Complete the number sentence(s) above using the knowledge that angles on a straight line add up to 180°

How can we use our learning from the previous question to help us with this one? (hint: think + and -)

How many number sentences can you make from this diagram?



Remember: angles on a straight line add up to 180°

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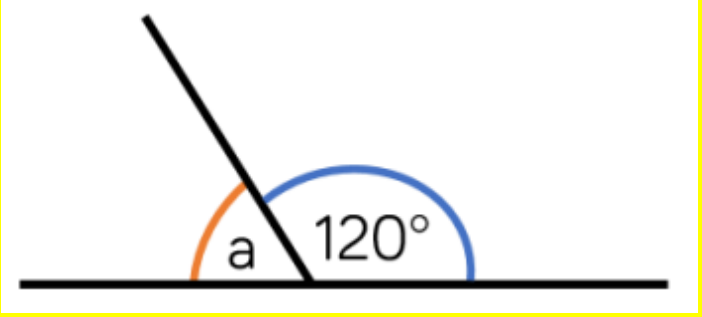
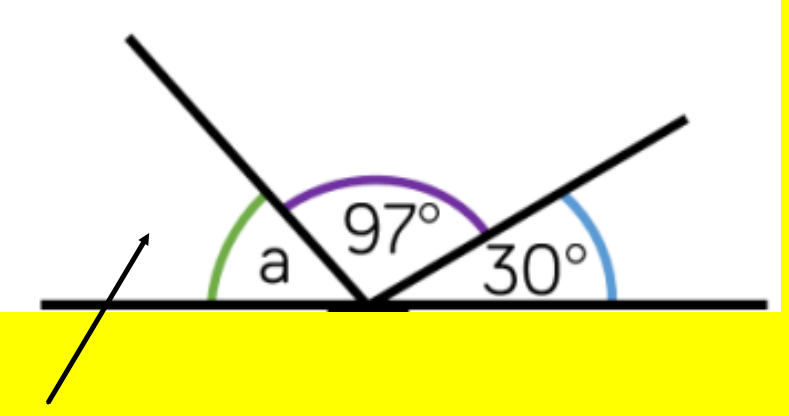
Calculate the size of the missing angle(s)

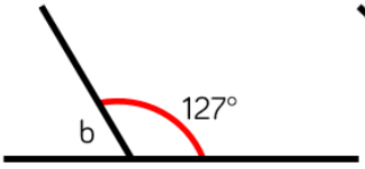


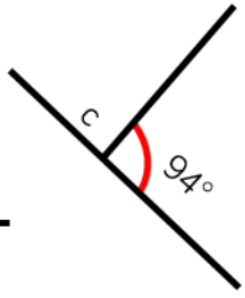


EXT: What number sentence could be written from this question?

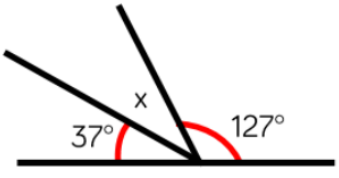
Independent Task

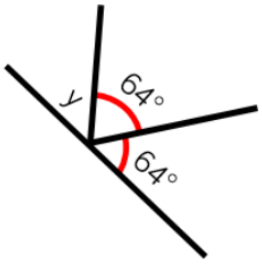
- Calculate the missing angles.

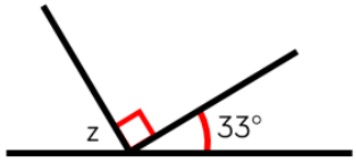




- Calculate the missing angles.







Is there more than one way to calculate the missing angles?

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Independent Learning:

1. Complete questions on calculating missing angles. 

2. Complete 'green' questions. 

3. Complete 'light blue' questions 

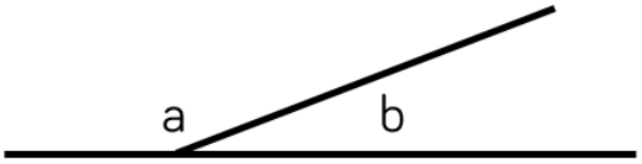
4. Complete 'dark blue' questions. 

Always show your 'greater depth' potential
- give explanations that make sense.
- use diagrams to prove or disprove.
- show your working out.

How can we solve this question?

What key information do we need from the question?

Here are two angles.



Angle b is a prime number between 40 and 50

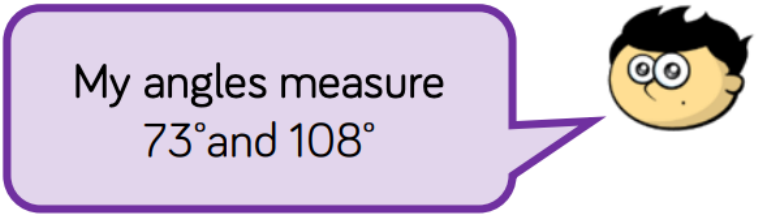
Use the clue to calculate what the missing angles could be.

Is it possible that there is more than one answer?

How can we solve this question?

What key information do we need from the question?

Jack is measuring two angles on a straight line.

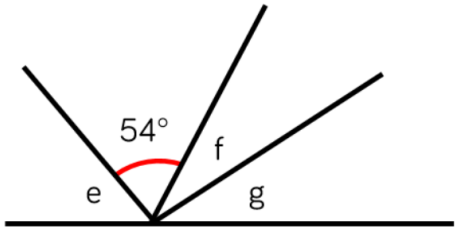


Explain why at least one of Jack's angles must be wrong.

What mathematical knowledge can we use in our explanation?

How can we solve this question?

What key information do we need from the question?



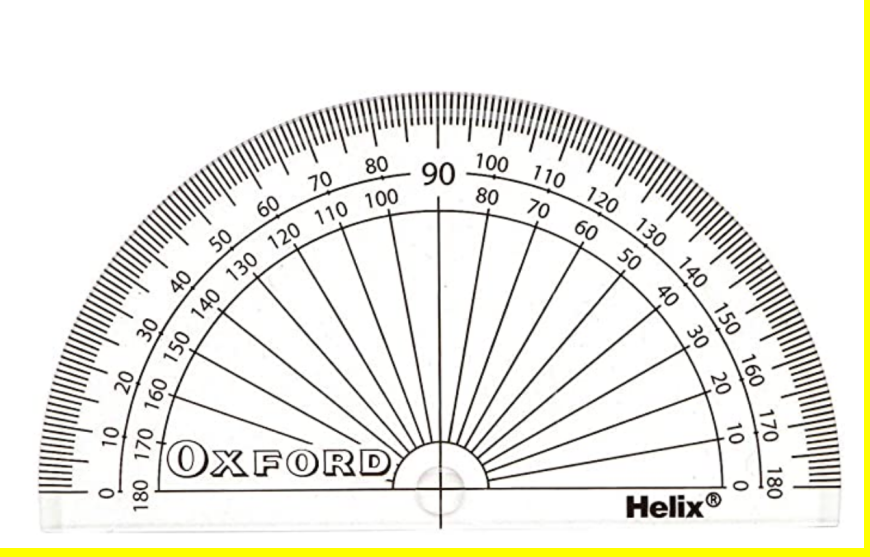
- The total of angle f and g are the same as angle e
- Angle e is 9° more than the size of the given angle.
- Angle f is 11° more than angle g

Calculate the size of the angles.

What will be our first step into our solution?

Place a second protractor opposite to this one:

- What shape is created?
- How many degrees do you think it has altogether?
- Are there any other objects that have the same angle size?



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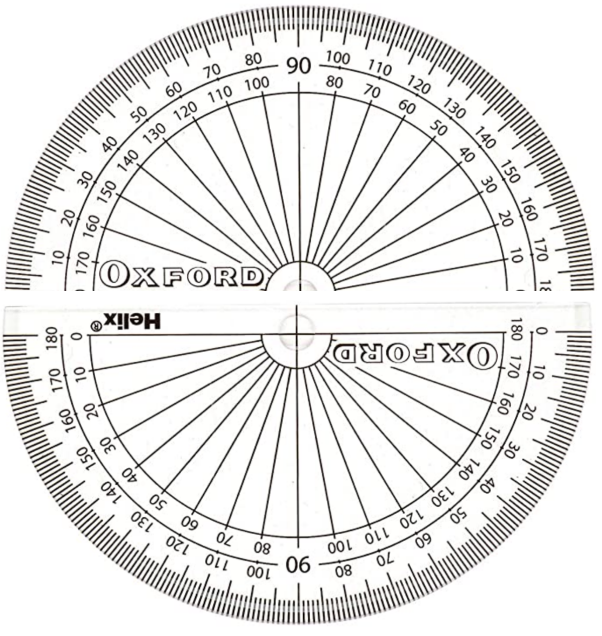

12.04.20

LO: to calculate missing angles at a point, using angle sum knowledge.

Starter Tasks:

- 'green pen' task
- arithmetic practice

Success Criteria

- To know that angles on a point = 360°
- To calculate missing angles using the knowledge above

Vocabulary

- protractor
- angles
- measurement
- degrees
- straight line
- acute, reflex, obtuse
- right angle
- on a point

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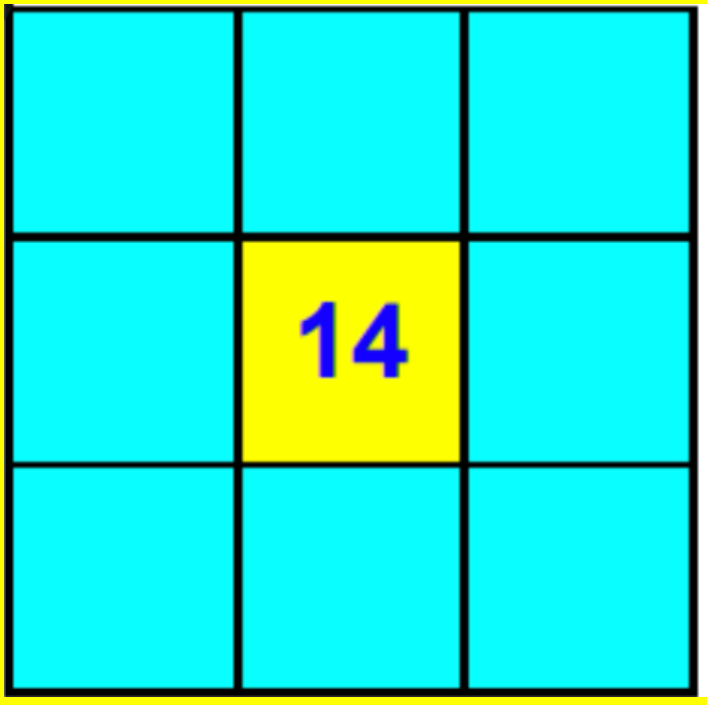
Maths Puzzle (while you wait)...



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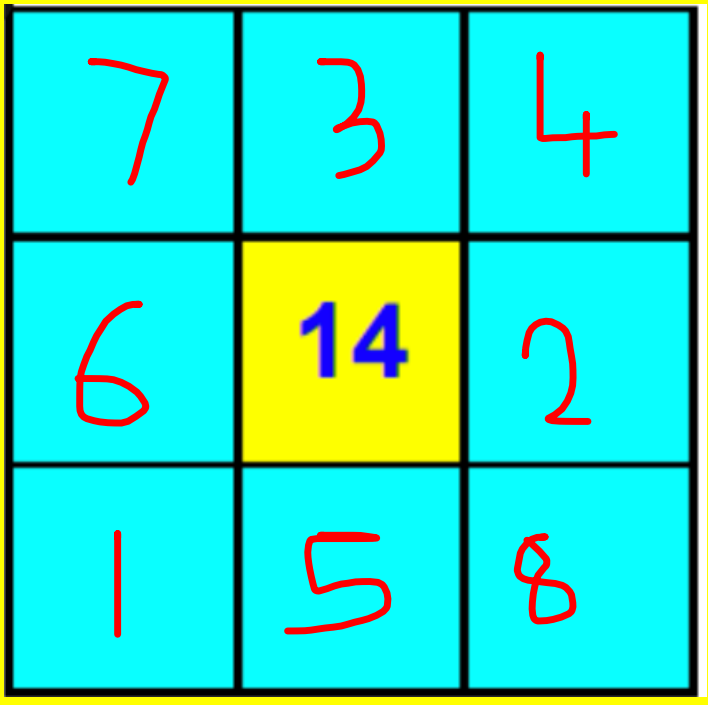
Maths Puzzle (while you wait)...



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Arithmetic

Copy these questions into your book and answer them

(NB: you may not need to show your working out for every question).

1) 10% of 1240 =

2) 30% of 640 =

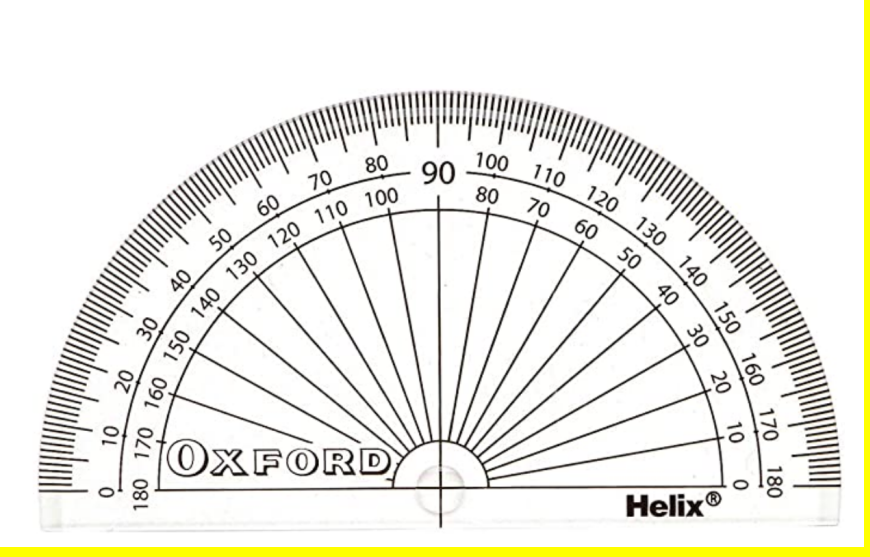
3) 25% of 1200 =

4) 85% of 5000 =

5) 75% of 3200 =

Place a second protractor opposite to this one:

- What shape is created?
- How many degrees do you think it has altogether?
- Are there any other objects that have the same angle size?



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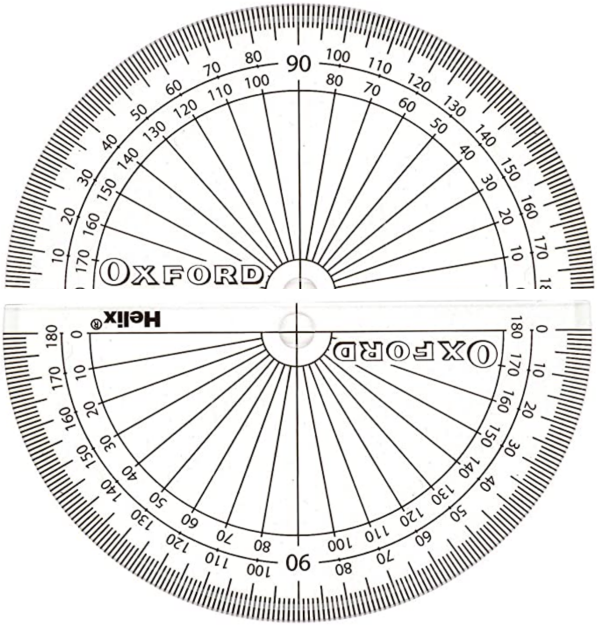

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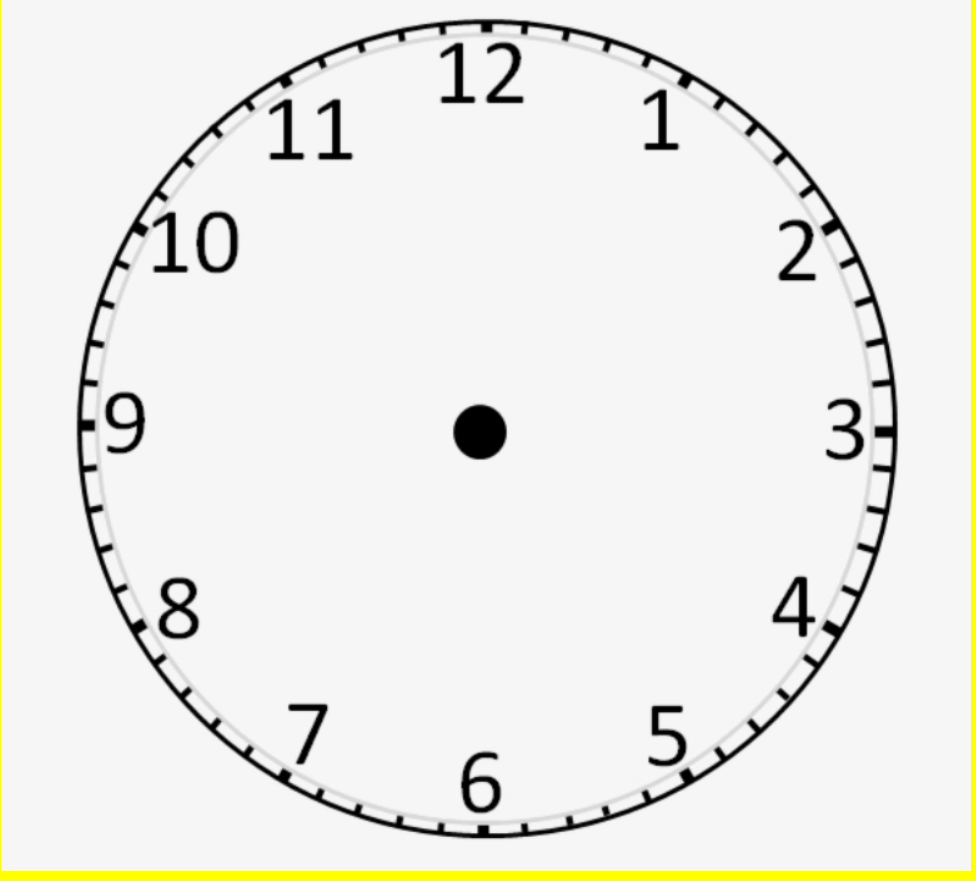
How many right angle turns are there in a clock?



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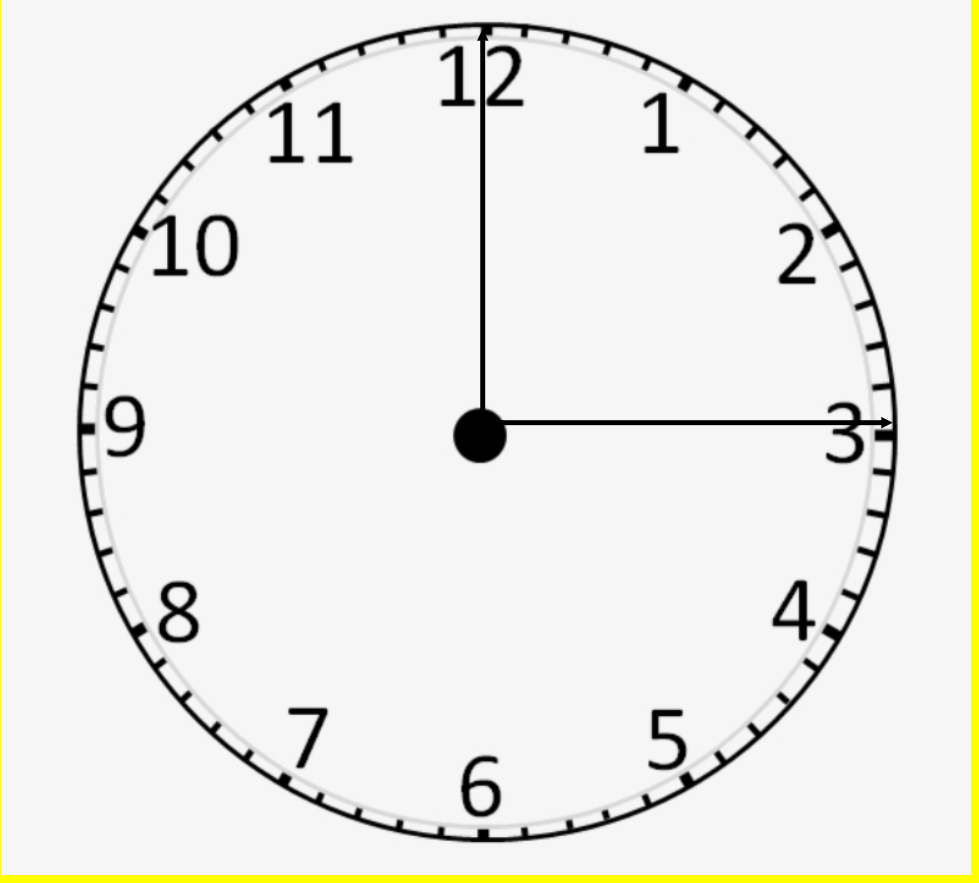
What is the size of the angle made by 3pm?



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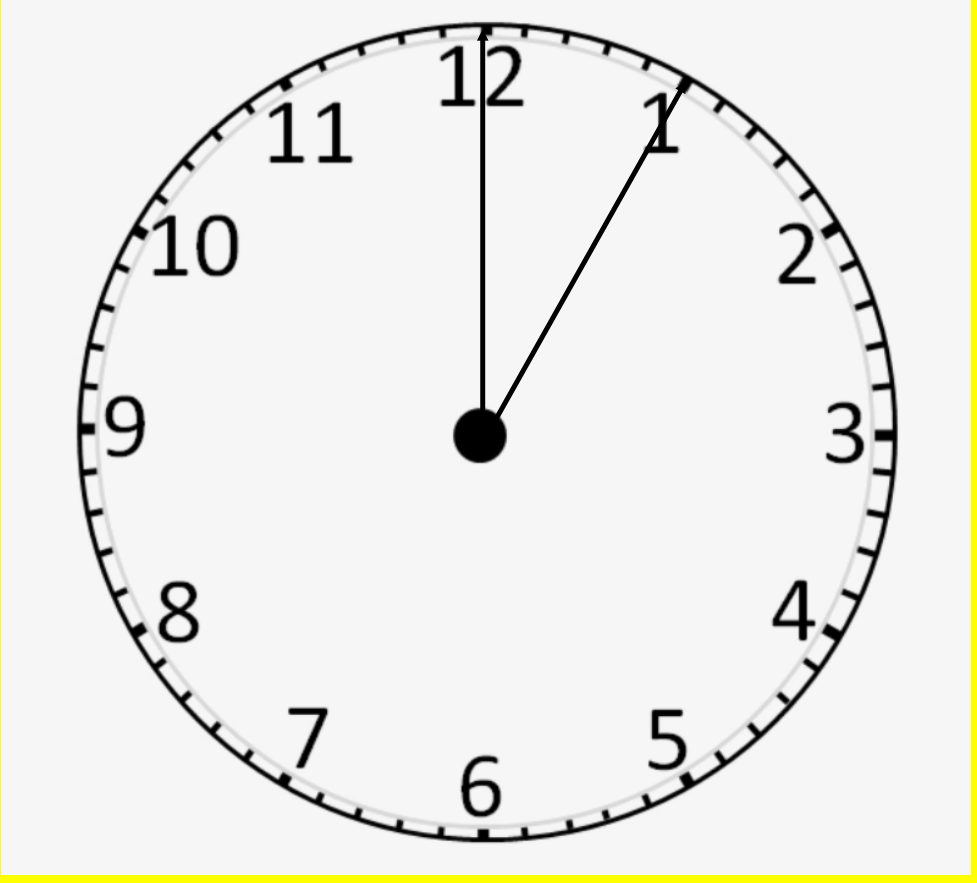
What is the size of the angle made by 1pm?
How do you know?



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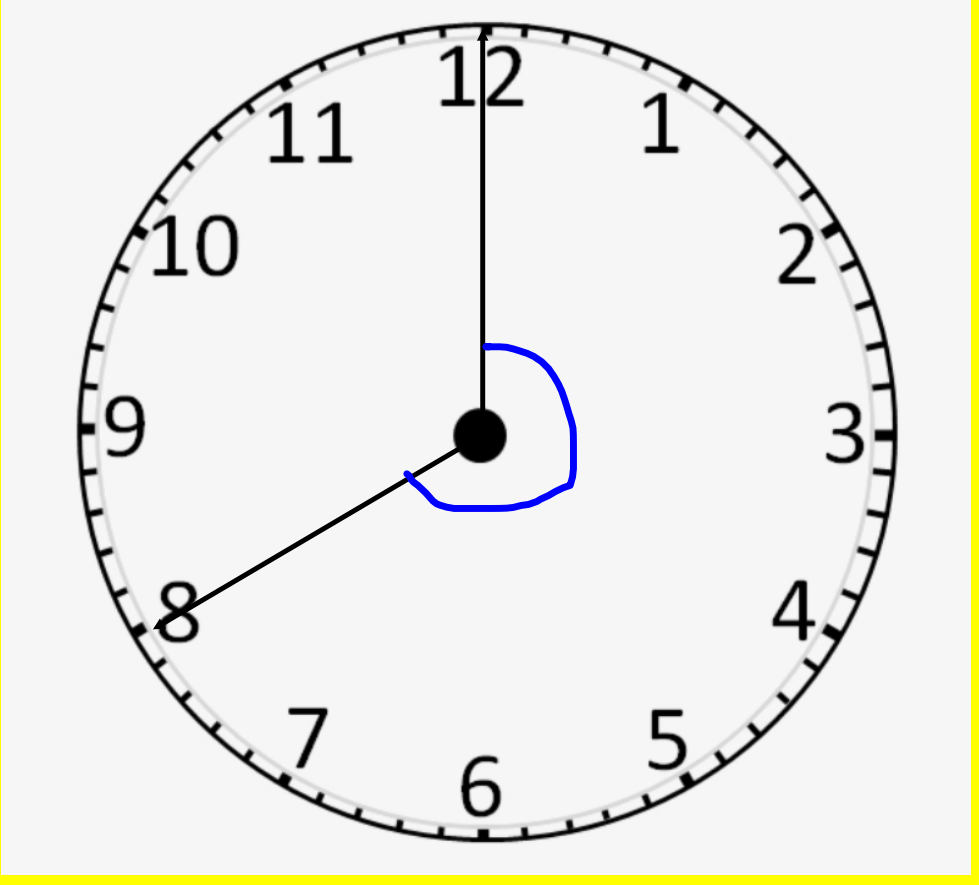
Calculate the size of the angle made by 8pm.



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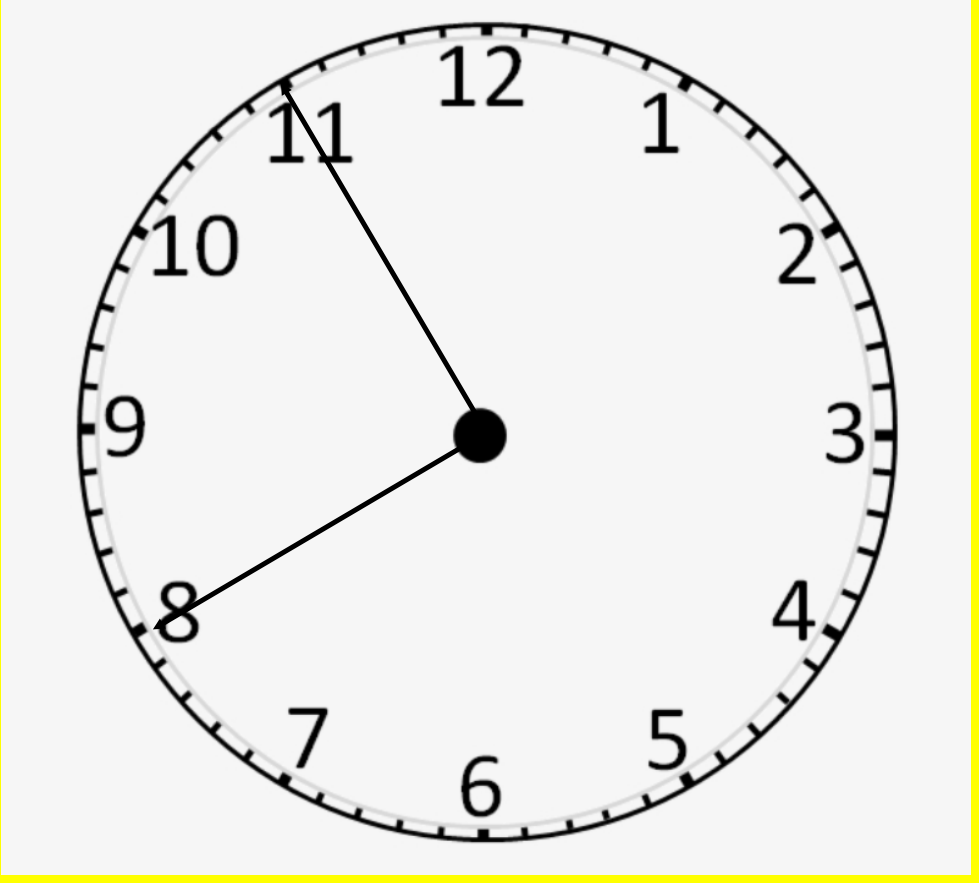
Show a time that creates the angle of 90°

(NB: you can't use any o'lock timings - 3pm or 9pm)



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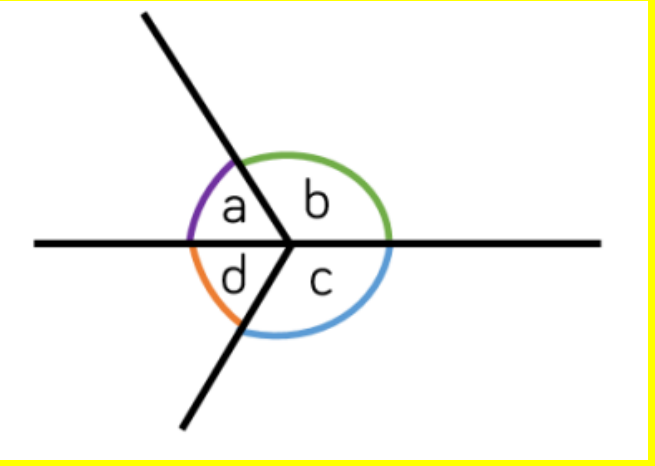
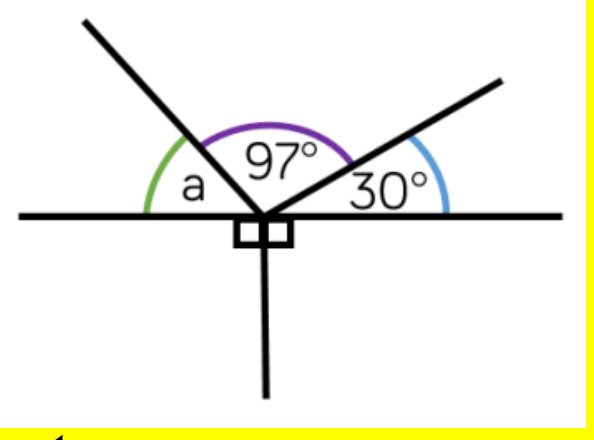


Complete the number sentence(s) using the knowledge that angles at a point add up to 360°.

Calculate the size of the missing angle(s)

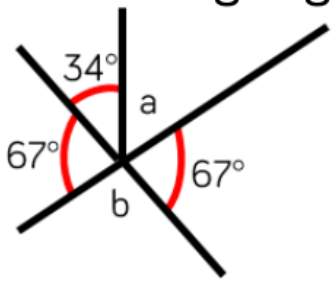
Is there any mathematical knowledge we can apply to help us?

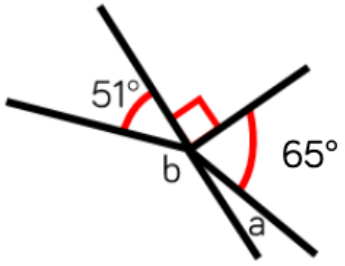


EXT: What number sentence could be written from this question?

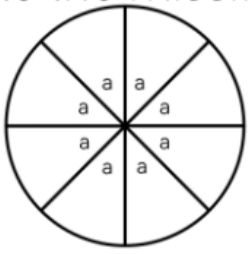
Calculate the size of the missing angle(s)

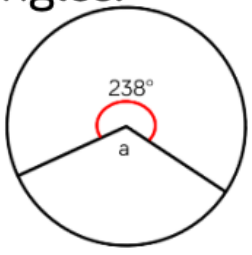
Calculate the missing angles.

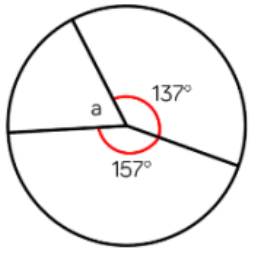




Calculate the missing angles.







June 6, 2020

Independent Learning:

1. Complete questions on calculating missing angles. 

2. Complete 'green' questions. 

3. Complete 'light blue' questions 

4. Complete 'dark blue' questions. 

Always show your 'greater depth' potential
- give explanations that make sense.
- use diagrams to prove or disprove.
- show your working out.

How can we solve this question?

What key information do we need from the question?

Equal Angles

There are five equal angles around a point.
What is the size of each angle?

Explain how you know.

Is it possible that there is more than one answer?

How can we solve this question?

What key information do we need from the question?

Equal Angles

There are five equal angles around a point.
What is the size of each angle?

Explain how you know.

360° divided 5 = 72°

Is it possible that there is more than one answer?

How can we solve this question?

What key information do we need from the question?

The Ultimate Proof

Four angles meet at the same point on a straight line.

One angle is 81°.
The other three angles are equal.

What size are the other three angles?

Draw a diagram to prove your answer.

What mathematical knowledge can we use in our explanation?

How can we solve this question?

What key information do we need from the question?

The Ultimate Proof

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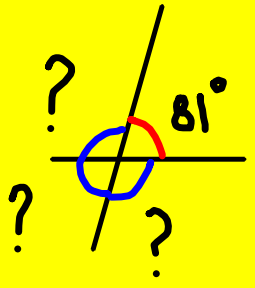


360° - 81° = 279° 279° divided 3 =

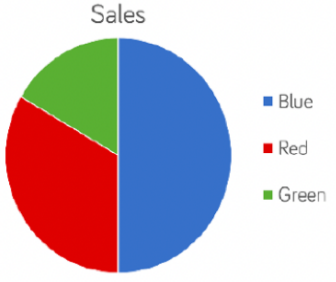
What mathematical knowledge can we use in our explanation?

How can we solve this question?

What key information do we need from the question?

Is there any information that we establish already?

Here is a pie chart showing the colour of cars sold by a car dealer.



The numbers of blue cars sold is equal to the total numbers of red and green cars sold.

The number of red cars sold is twice the number of green cars sold.

Work out the size of the angle for each section of the pie chart.

Remember to explain your mathematical reasoning

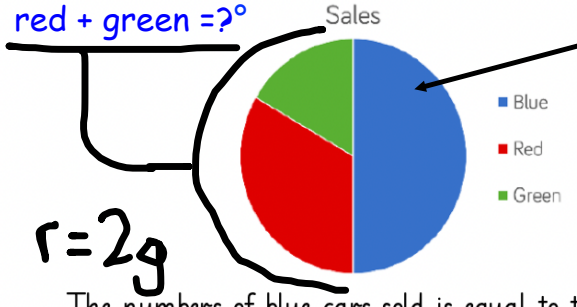
What will be our first step into our solution?

What key information do we need from the question?

Is there any information that we establish already?

Here is a pie chart showing the colour of cars sold by a car dealer.

red + green =?°



r=2g

1/2 of the whole chart = 180°

The numbers of blue cars sold is equal to the total numbers of red and green cars sold.

The number of red cars sold is twice the number of green cars sold.

Work out the size of the angle for each section of the pie chart.

Remember to explain your mathematical reasoning

What will be our first step into our solution?