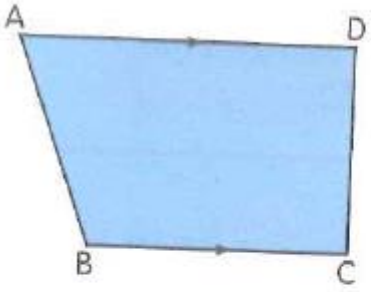
Year 5 - Properties trapeziums lesson 2 14.7.2020 17.7.2020

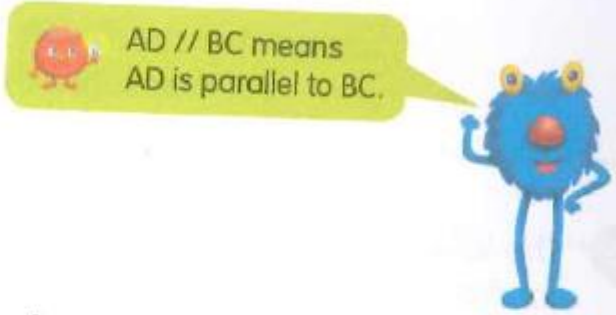
Working wall:

Trapeziums

Practice Book 5B, p.121

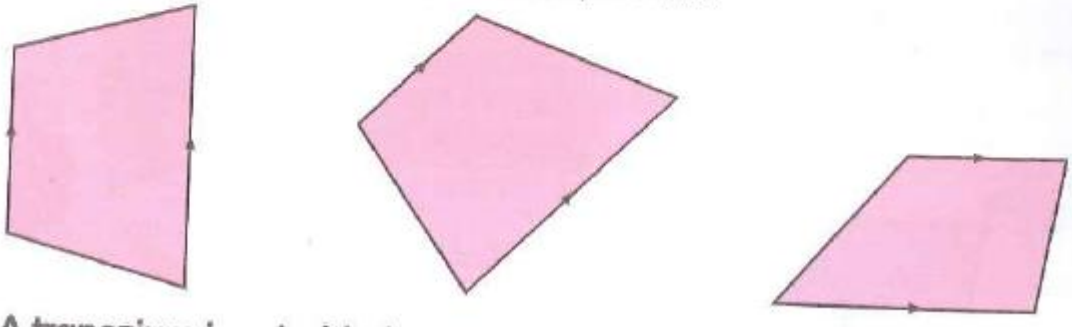
14 In the shape ABCD, AD // BC.





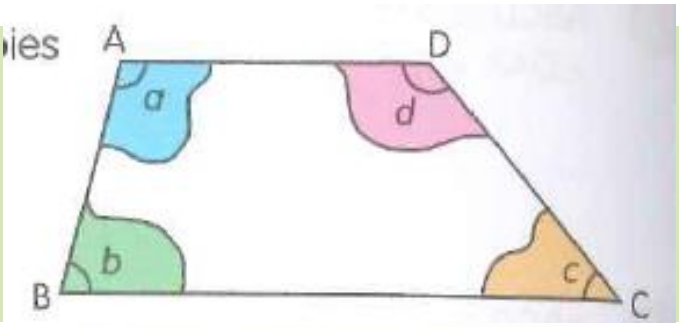
The shape ABCD is called a **trapezium**.

Here are three more examples of trapeziums.



A trapezium is a 4-sided shape in which only one pair of opposite sides is parallel.

135



$\angle a + \angle b = 180°$ and $\angle c + \angle d = 180°$

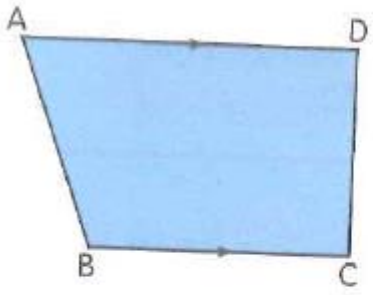
In a trapezium, each pair of angles between the parallel sides adds up to 180°.

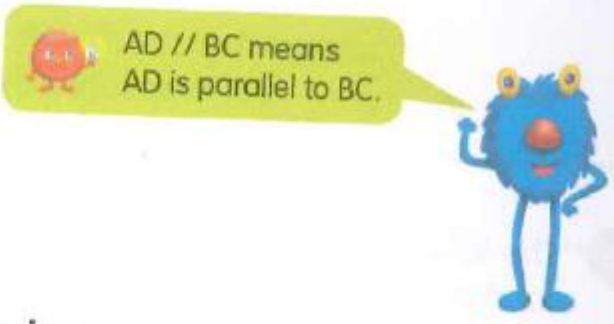
Year 5 - Properties trapeziums lesson 2 14.7.2020 17.7.2020

Trapeziums

Practice Book 5B, p.121

14 In the shape ABCD, AD // BC.





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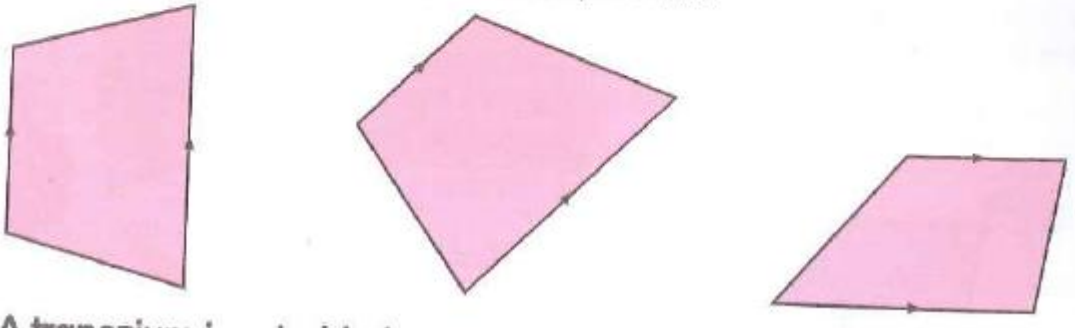

A trapezium is a 4-sided shape in which only one pair of opposite sides is parallel.

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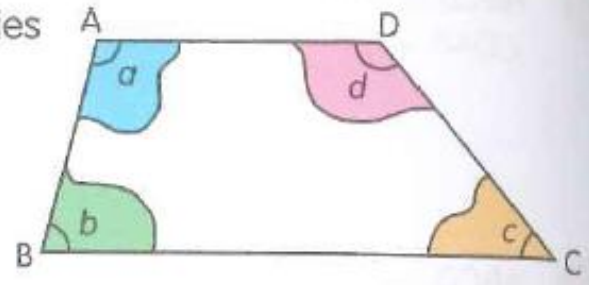
Activity

15 Your teacher will give you two copies of the trapezium ABCD.

Cut out the angles *a*, *b*, *c* and *d*.



Arrange the cut-out pieces of $\angle a$ and $\angle b$ on a straight line as shown. In the same way, arrange the cut-out pieces of $\angle c$ and $\angle d$.

What can you say about the sum of:

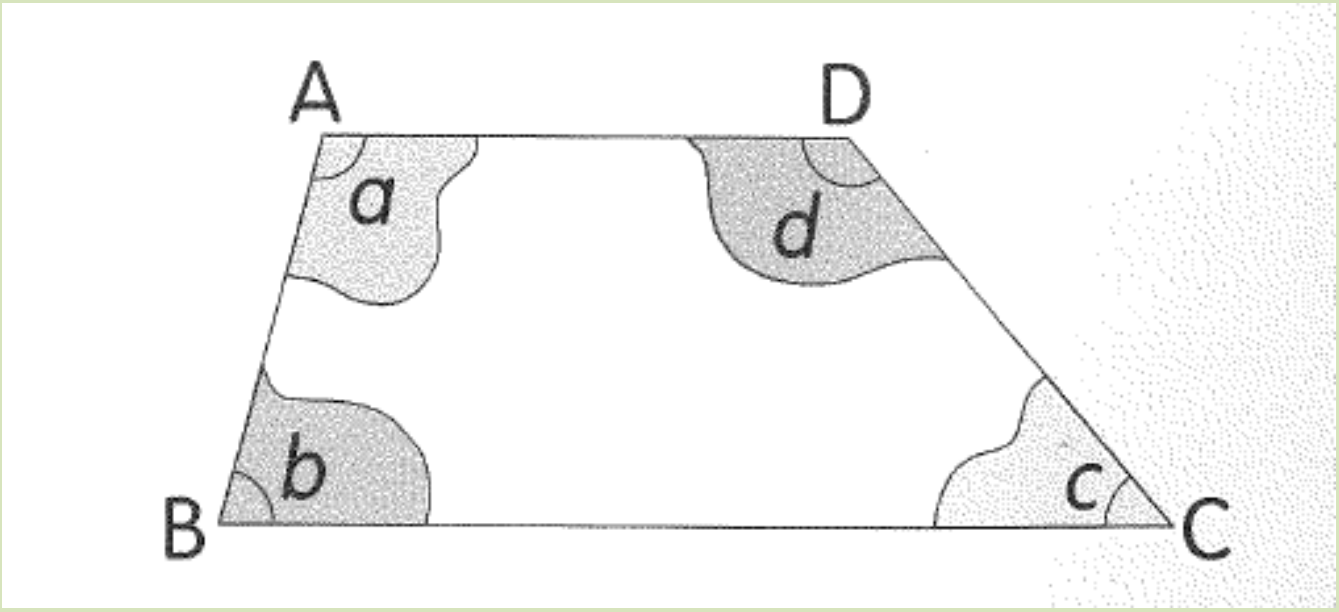
a $\angle a$ and $\angle b$?

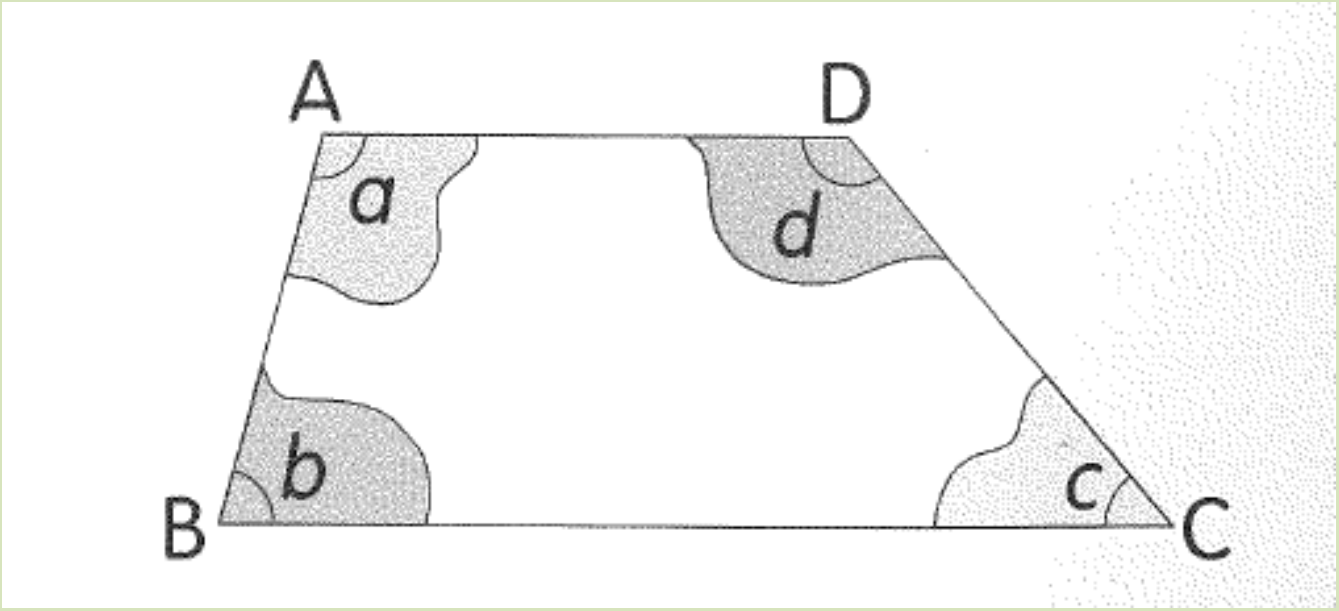
b $\angle c$ and $\angle d$?

$\angle a + \angle b = 180°$ and $\angle c + \angle d = 180°$

In a trapezium, each pair of angles between the parallel sides adds up to 180°.

Year 5 - Properties trapeziums lesson 2 14.7.2020 17.7.2020

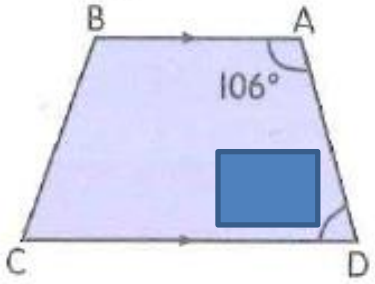




Year 5 - Properties trapeziums lesson 2 14.7.2020 17.7.2020

16 The following trapeziums are not drawn to scale. Find the unknown marked angles.

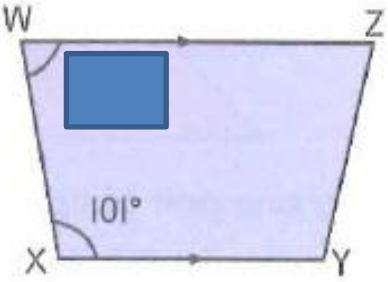
a



$\angle ADC = 180° - 106° = 74°$

∠BAD and ∠ADC add up to 180°. They are a pair of angles between two parallel sides.

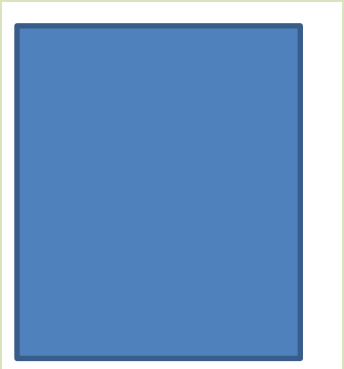
b

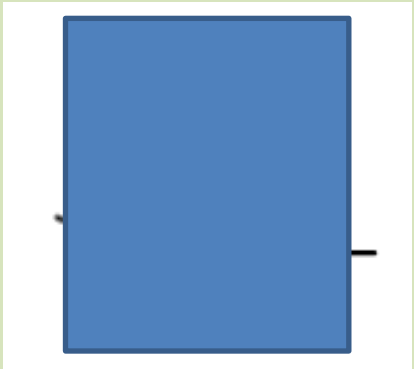


$\angle ZWX = 180° - 101°$

$= \square$

∠WXY and ∠ZWX add up to 180°.





Year 5 - Properties trapeziums lesson 2 14.7.2020 17.7.2020

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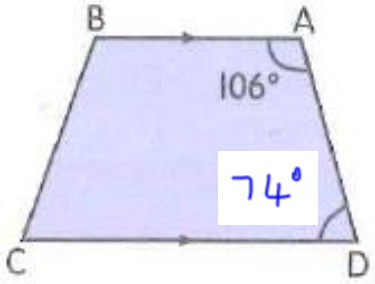

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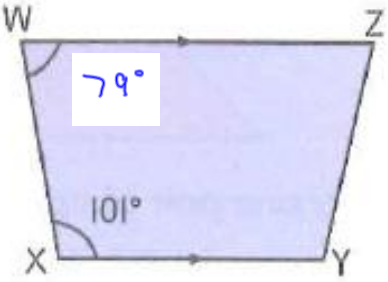
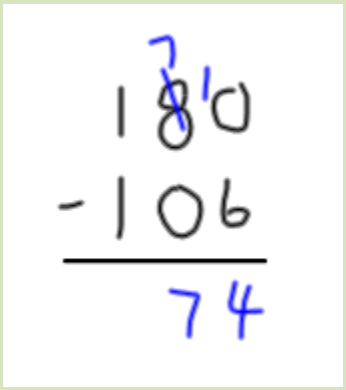
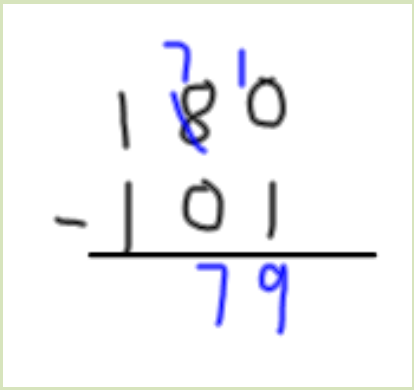


$\angle ZWX = 180° - 101°$

$= 79°$

∠WXY and ∠ZWX add up to 180°.





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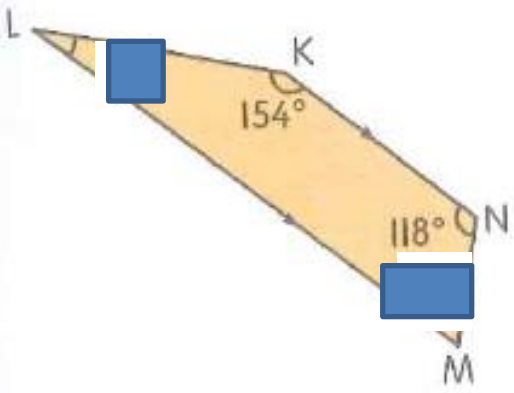
The following trapeziums are not drawn to scale.

17 Find the unknown marked angles in trapezium KLMN.

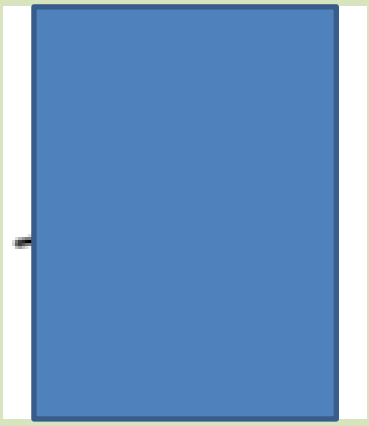


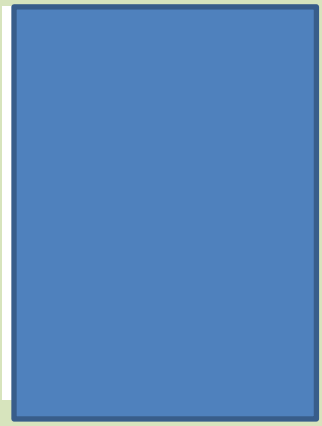
$\angle KLM = 180° - \square°$

$= \square°$

$\angle LMN = 180° - \square°$

$= \square°$





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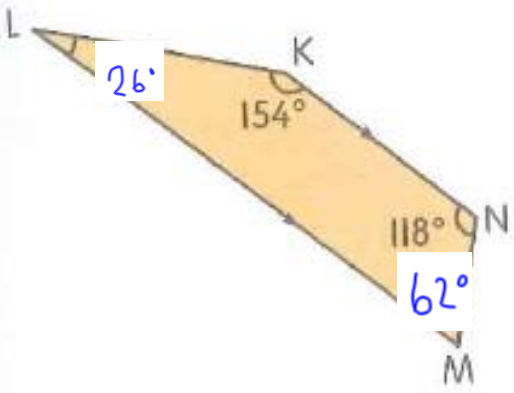


$\angle KLM = 180° - 154°$

$= 26°$

$\angle LMN = 180° - 118°$

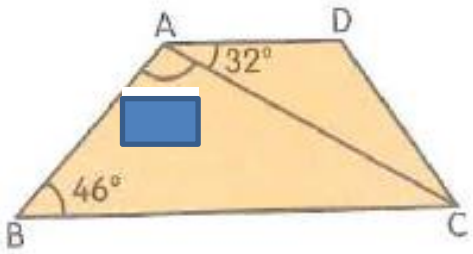
$= 62°$

$$\begin{array}{r} 180 \\ -\ 154 \\ \hline 26 \end{array}$$

$$\begin{array}{r} 180 \\ -\ 118 \\ \hline 62 \end{array}$$

Year 5 - Properties trapeziums lesson 2 14.7.2020 17.7.2020

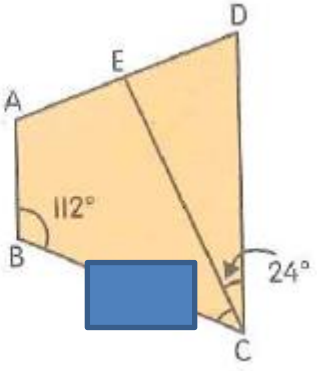
18 ABCD is a trapezium where AD // BC.
Find ∠BAC. [redacted]°



[redacted]

[redacted]

19 ABCD is a trapezium where AB // DC.
Find ∠BCE. [redacted]



[redacted]

[redacted]

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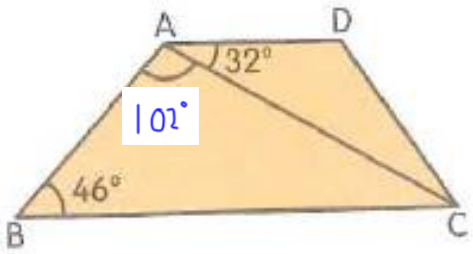
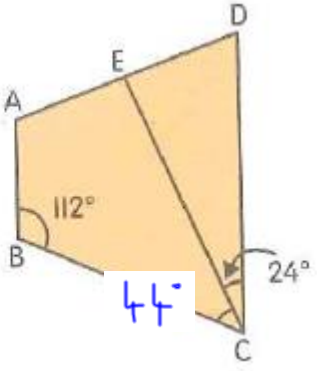
18 ABCD is a trapezium where AD // BC.
Find ∠BAC. ∠BAC = 102°



$$\begin{array}{r} 46 \\ +\,32 \\ \hline 78 \end{array}$$

$$\begin{array}{r} {}^{7}\cancel{1}{}^{1}80 \\ -\,78 \\ \hline 102 \end{array}$$

19 ABCD is a trapezium where AB // DC.
Find ∠BCE. ∠BCE = 44°



$$\begin{array}{r} 112 \\ +\,\;24 \\ \hline 136 \end{array}$$

$$\begin{array}{r} {}^{7}\cancel{1}{}^{1}80 \\ -\,136 \\ \hline 44 \end{array}$$

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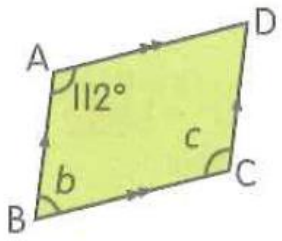
The following questions will require you to use the learning from parallelograms, rhombuses and trapeziums.
Remember to start at mild and work your way through the tasks.

Let's Practise!

Mild

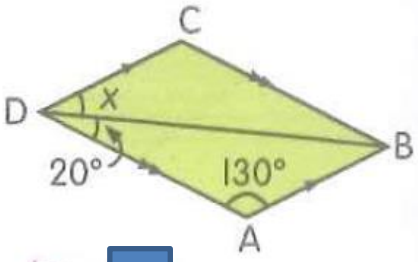
The following shapes are not drawn to scale. Find the unknown marked angles.

21



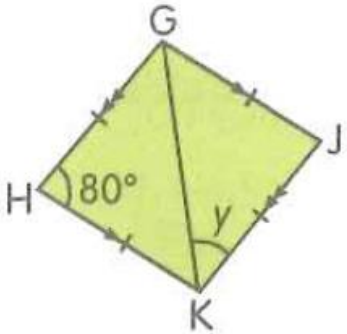
$\angle c =$ ☐
$\angle b =$ ☐

22



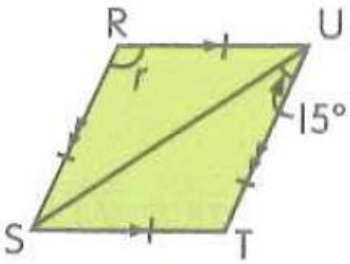
$\angle x =$ ☐

23



$\angle y =$ ☐°

24



$\angle r =$ ☐

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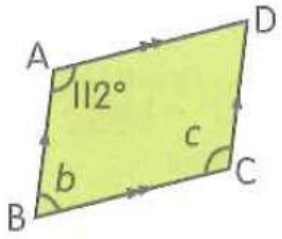
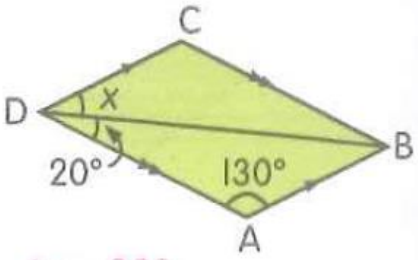


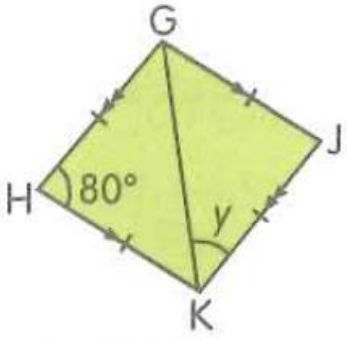
$\angle c = 112°$
$\angle b = 68°$

22



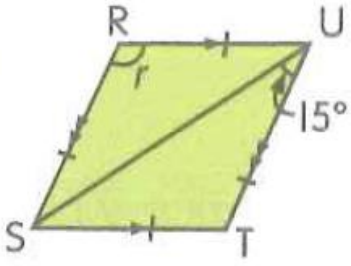
$\angle x = 30°$

23



$\angle y = 50°$

24



$\angle r = 150°$

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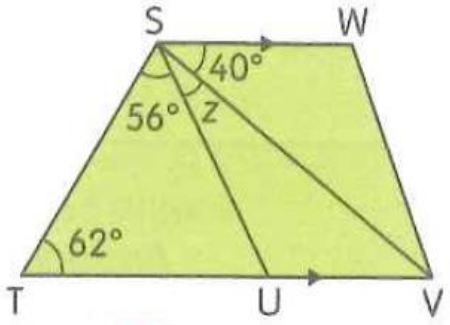
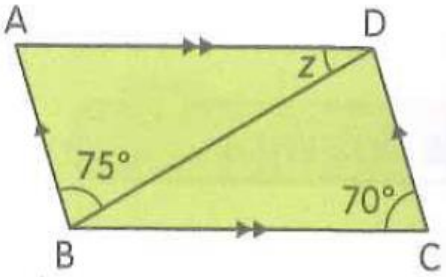
25



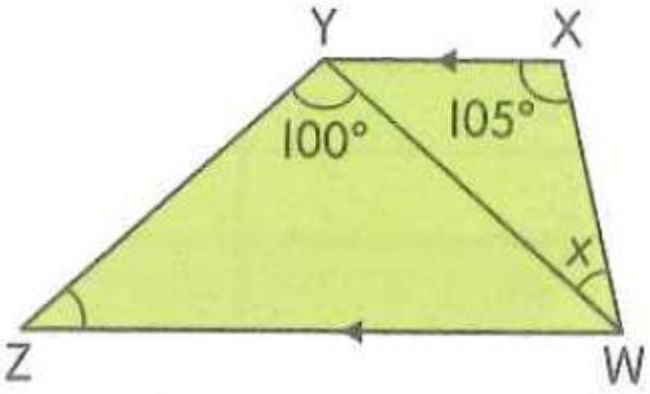
$\angle z =$ ☐

26



$\angle z =$ ☐

27



$\angle x =$ ☐°

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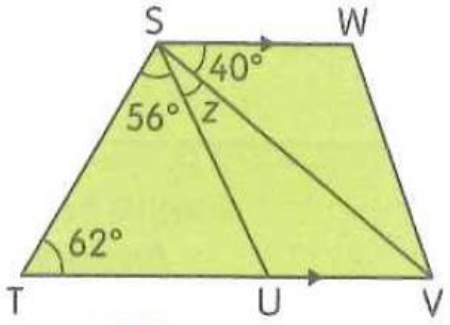
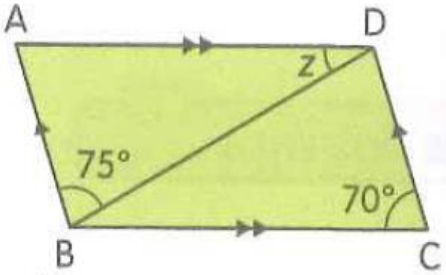
25



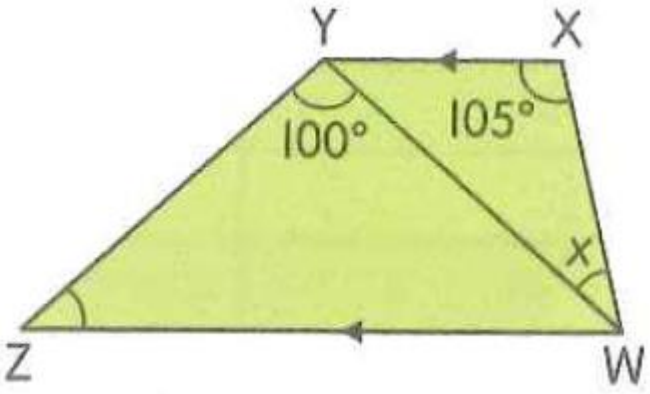
$\angle z = 22°$

26



$\angle z = 35°$

27

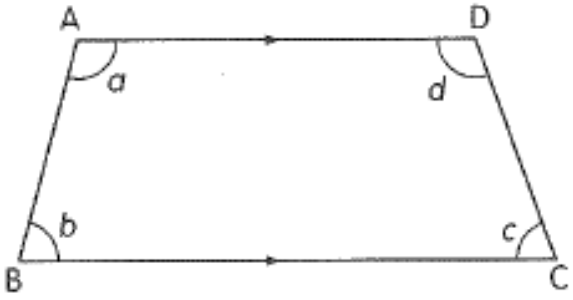


$\angle x = 35°$

Practice 7 Trapeziums

Mild

1 ABCD is a trapezium. Measure the unknown angles and fill in the spaces.



$\angle a =$ _____ °

$\angle b =$ _____ °

$\angle c =$ _____ °

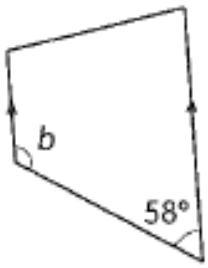
$\angle d =$ _____ °

$\angle a + \angle b = \angle$ _____ $+ \angle$ _____ $=$ _____ °

2 The following trapeziums are not drawn to scale. Find the unknown marked angles.

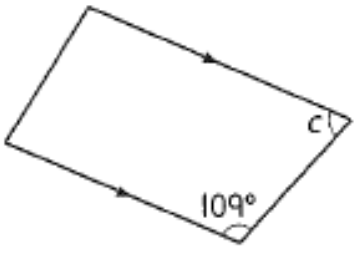
a

b

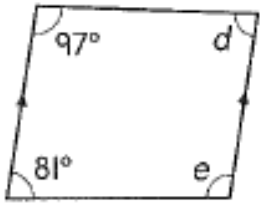


Spicy

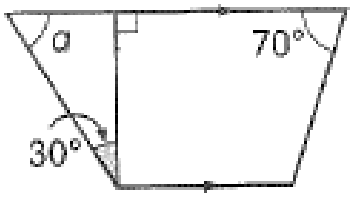
c



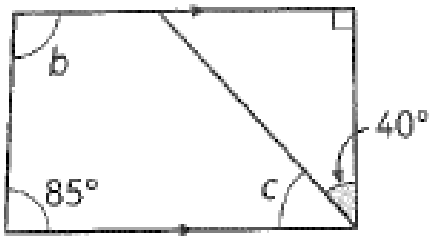
d



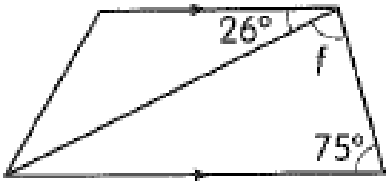
e



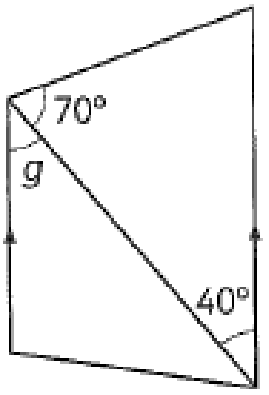
f



g



h



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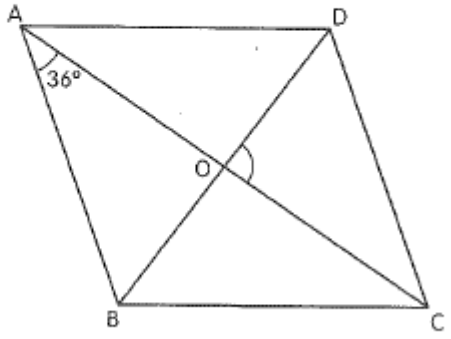
Hot

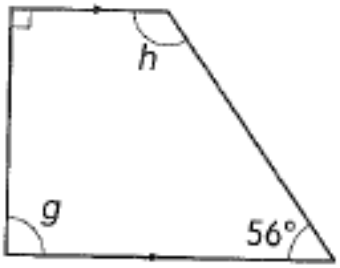
Challenging Practice

Date: _____

1 The shape below is a rhombus. Find ∠DOC.



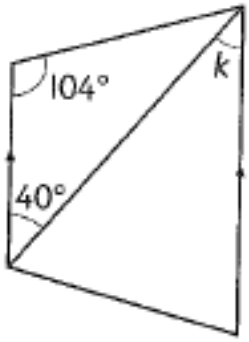
e



∠g = _____ °

∠h = _____ °

f

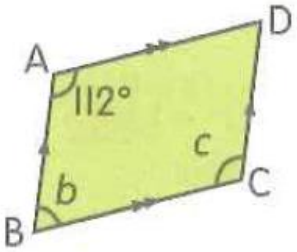


∠k = _____ °

Let's Practise!

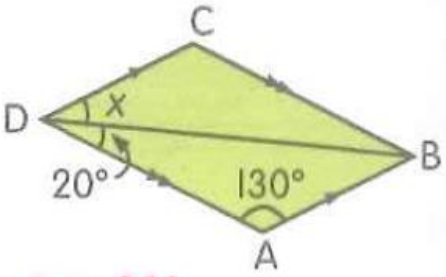
The following shapes are not drawn to scale. Find the unknown marked angles.

21



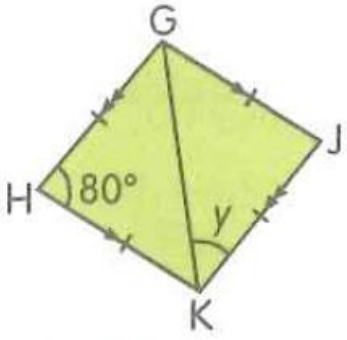
$\angle c = 112°$
$\angle b = 68°$

22



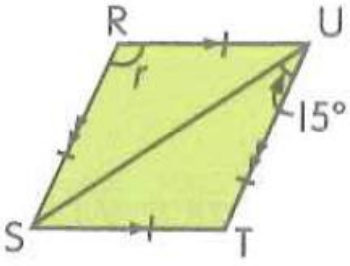
$\angle x = 30°$

23



$\angle y = 50°$

24



$\angle r = 150°$

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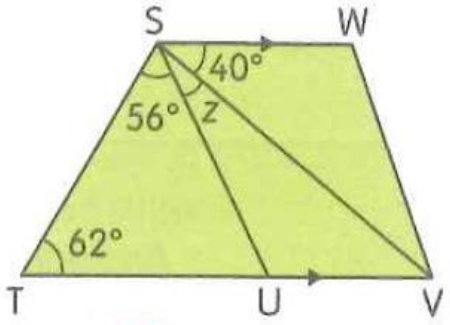
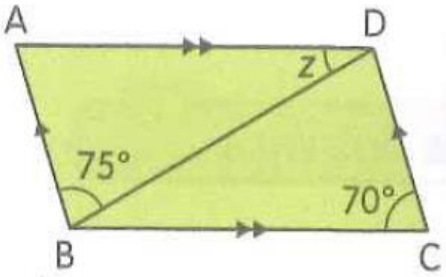


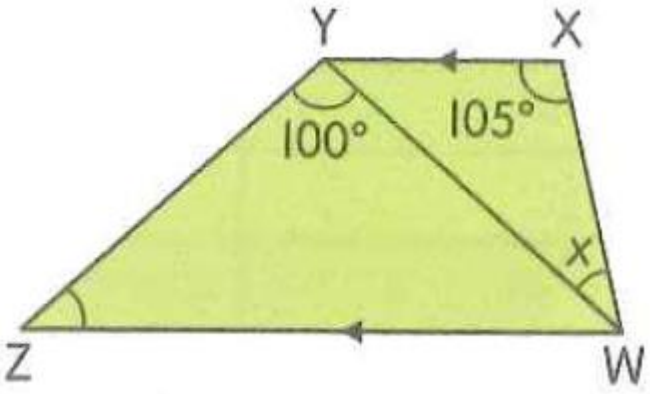
$\angle z = 22°$

26



$\angle z = 35°$

27



$\angle x = 35°$

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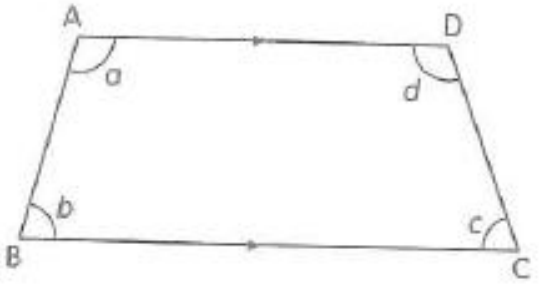
Practice 7 Trapeziums

1 ABCD is a trapezium. Measure the unknown angles and fill in the spaces.



$\angle a =$ 105 °

$\angle b =$ 75 °

$\angle c =$ 70 °

$\angle d =$ 110 °

$\angle a + \angle b = \angle$ c $+ \angle$ d $=$ 180 °

2 The following trapeziums are not drawn to scale. Find the unknown marked angles.

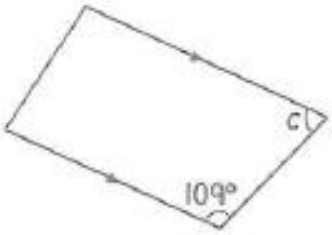
a

$\angle a = 180° - 116° = 64°$

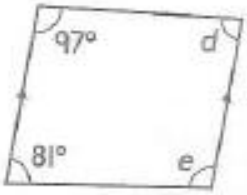
b

$\angle b = 180° - 58° = 122°$

c



d



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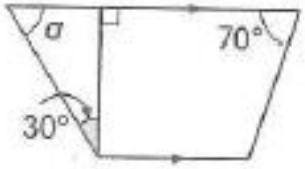
e

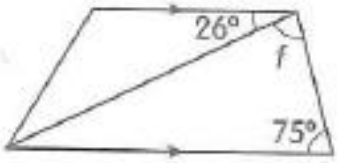


$\angle a = 180° - 90° - 30°$
$= 60°$

f

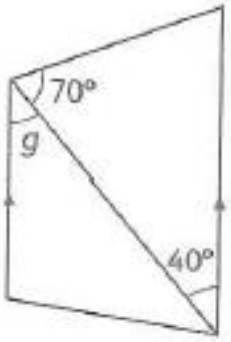
$\angle b = 180° - 85° = 95°$
$\angle c = 90° - 40° = 50°$

g



$\angle f + 26° = 180° - 75°$
$\angle f = 105° - 26° = 79°$

h



$180° - 70° - 40° = 70°$
$\angle g + 70° = 180° - 70°$
$\angle g = 110° - 70° = 40°$

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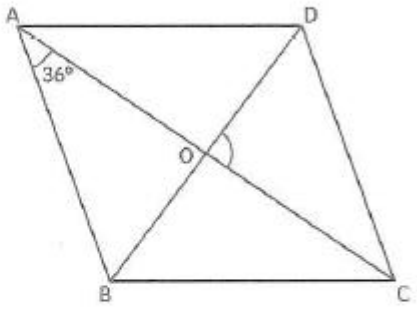
Challenging Practice

1 The shape below is a rhombus. Find ∠DOC.



AB = BC
Therefore triangle BAC is an isosceles triangle.

∠BAC = ∠BCA = 36°
∠ABC = 180° − 36° − 36° = 108°

∠CBO = 108° ÷ 2 = 54°
∠BOC = 180° − 54° − 36° = 90°

∠DOC = 180° − 90° = 90°