



KING EDWARD VI
HANDSWORTH GRAMMAR
SCHOOL FOR BOYS



KING EDWARD VI
ACADEMY TRUST
BIRMINGHAM

Year 7

2026

**Mathematics
Unit 5 Student**

2027

HGS Maths



Tasks



Dr Frost Course



Name: _____

Class: _____

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1 Fractions, Decimals and Percentages

1.1 Decimals to Percentages

Decimal

Multiply by 100

Fraction

Percentage

1.2 Percentages to Decimals

Decimal

Multiply by 100

Divide by 100

Fraction

Percentage

1.3 Percentages to Fractions

Decimal

Multiply by 100

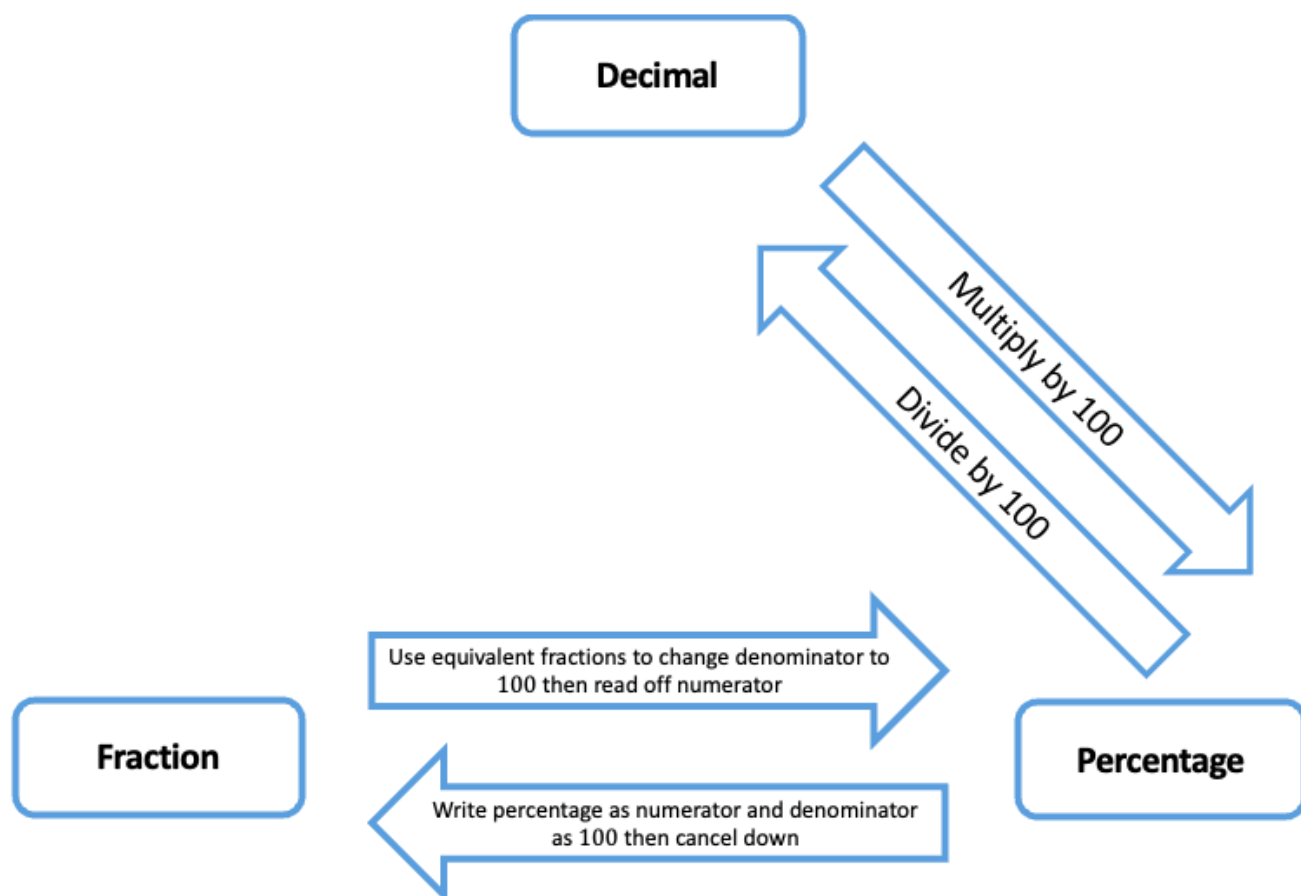
Divide by 100

Fraction

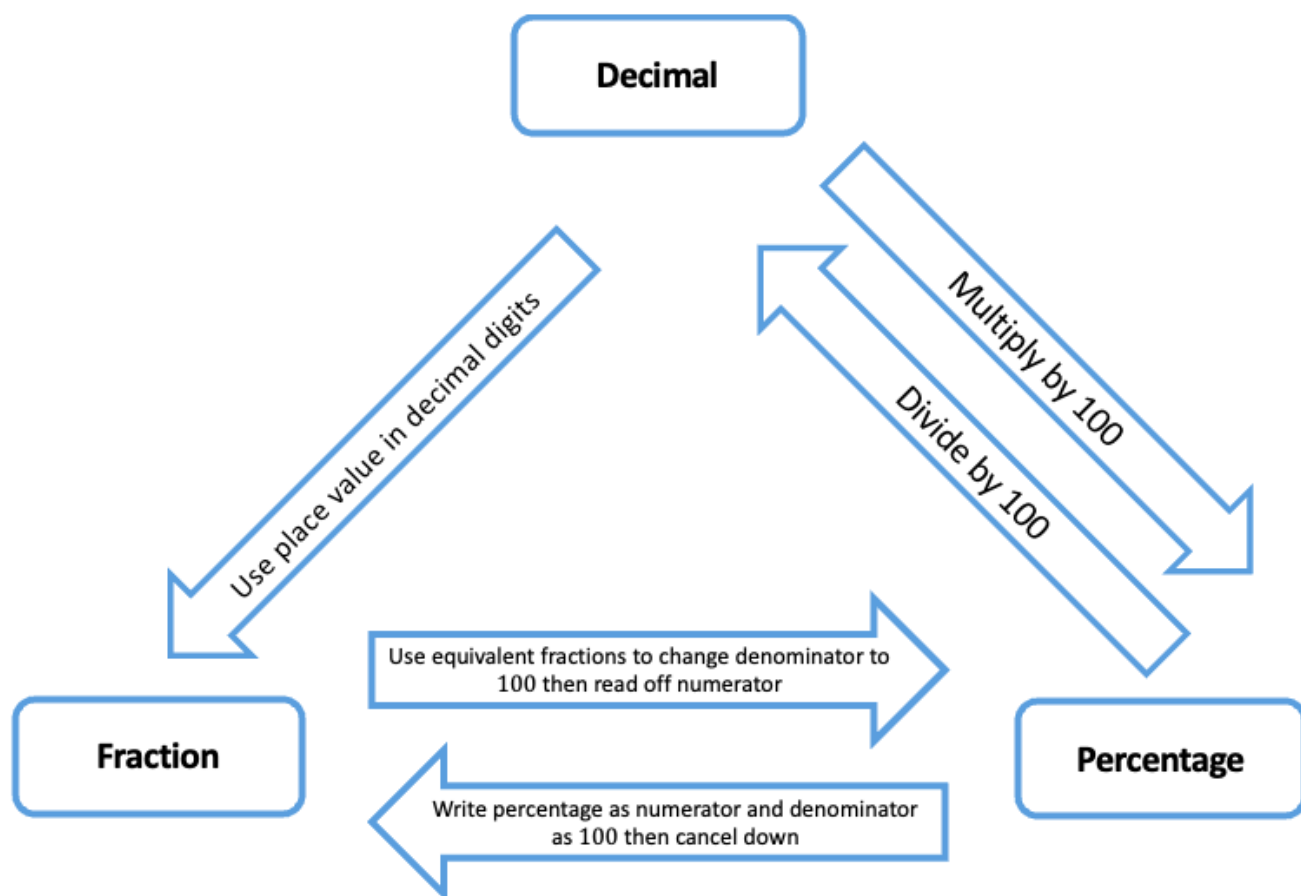
Percentage

Write percentage as numerator and denominator
as 100 then cancel down

1.4 Fractions to Percentages



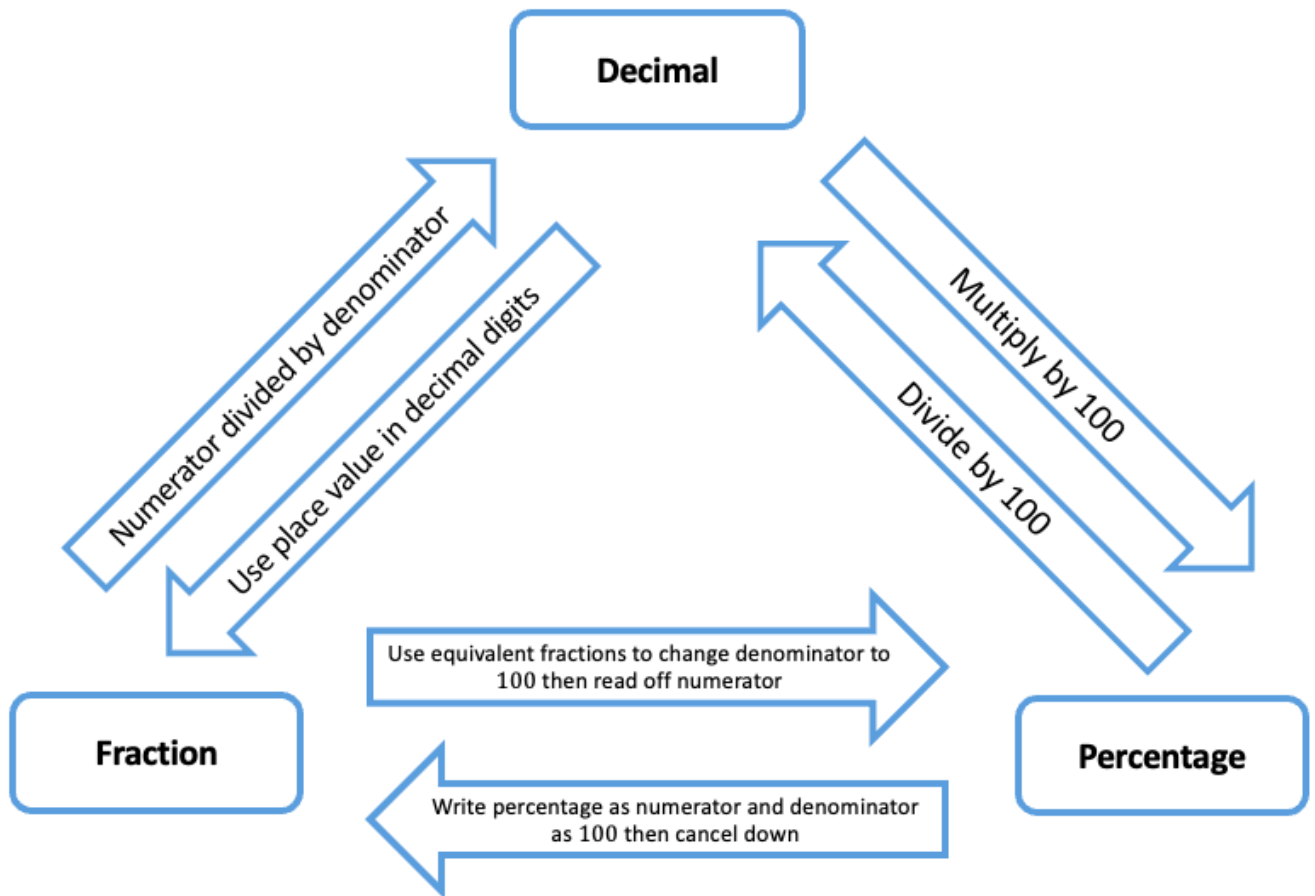
1.5 Decimals to Fractions



1.6 Recurring Decimal Notation

- $0.123\dot{4}$
- $0.\dot{6}$
- $2.\dot{3}\dot{7}$
- $0.\dot{1}4285\dot{7}$
- $7846.1\dot{3}$

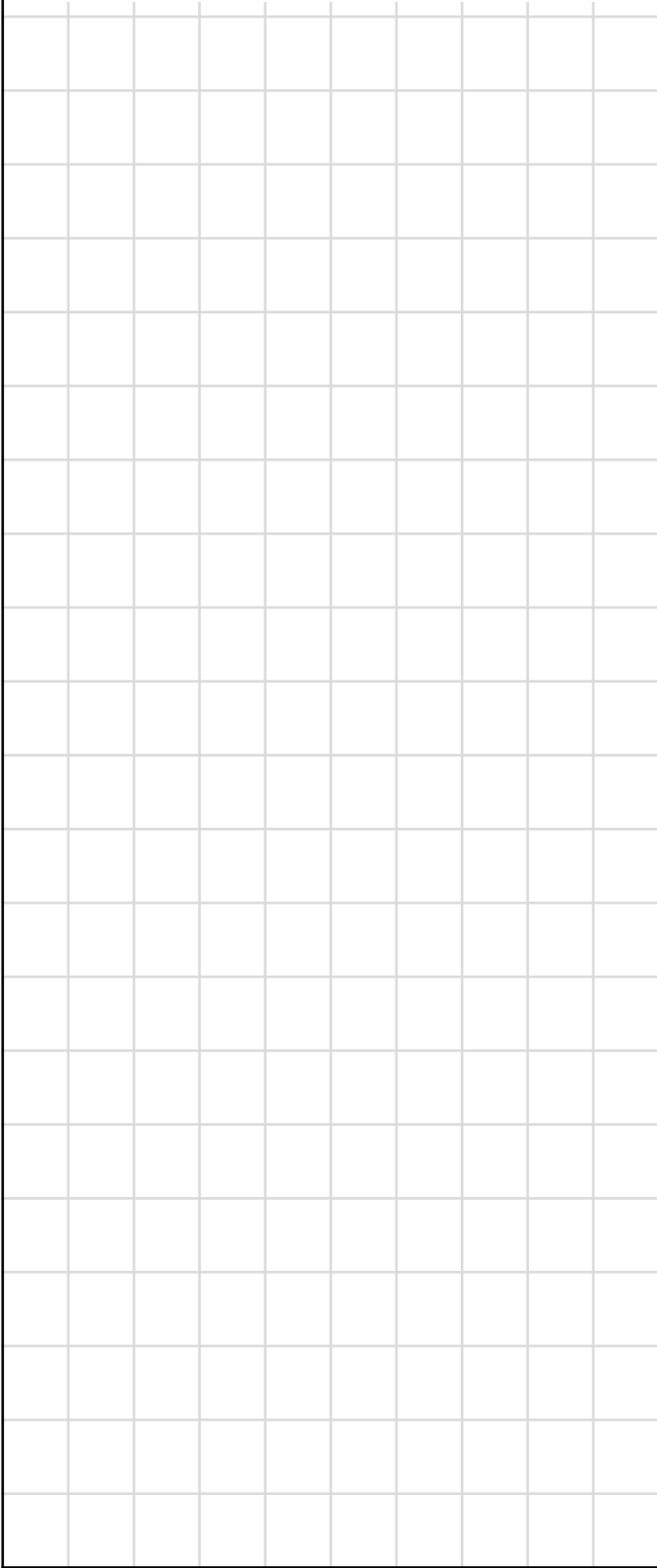
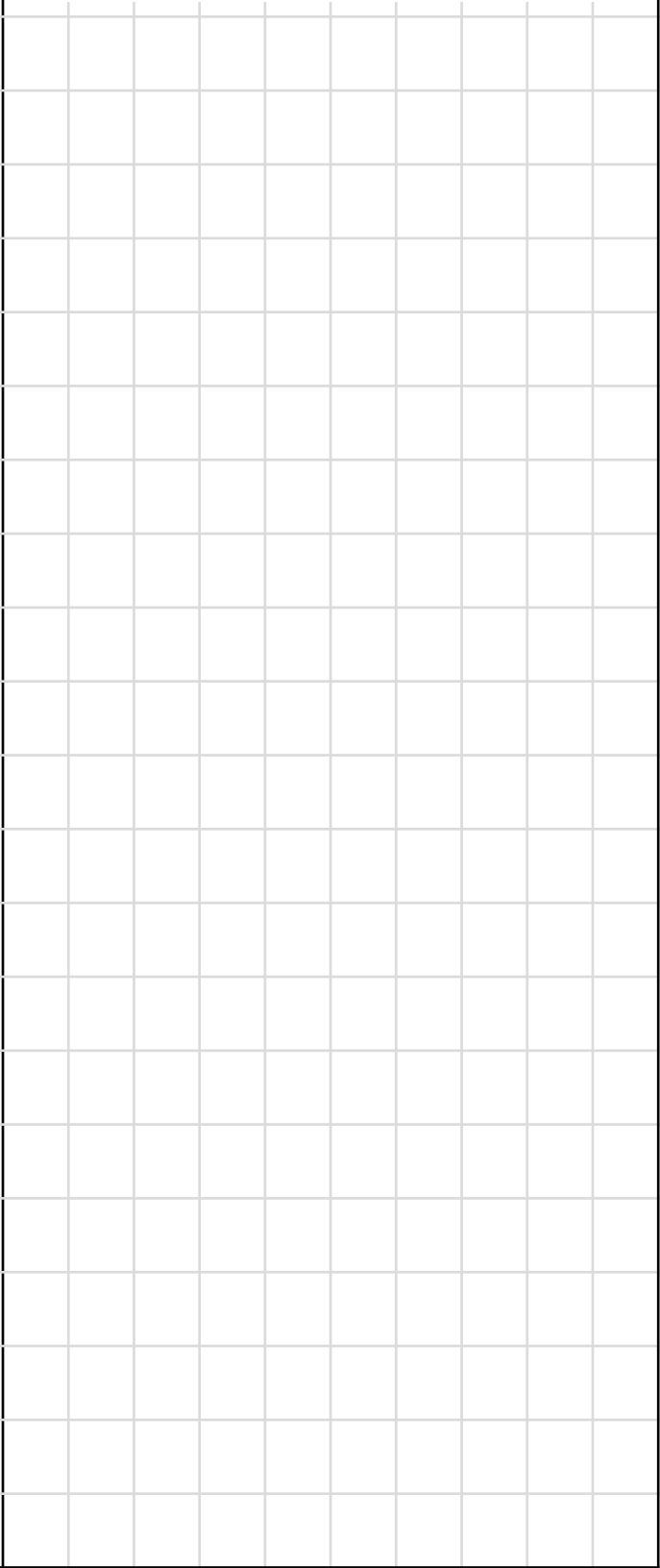
1.7 Fractions to Decimals



Worked Example	Your Turn
Convert the following fractions into decimals: a) $\frac{1}{8}$ b) $\frac{2}{3}$ c) $\frac{2}{15}$	Convert the following fractions into decimals: a) $\frac{3}{8}$ b) $\frac{2}{9}$ c) $\frac{5}{12}$

2 Ordering Numbers

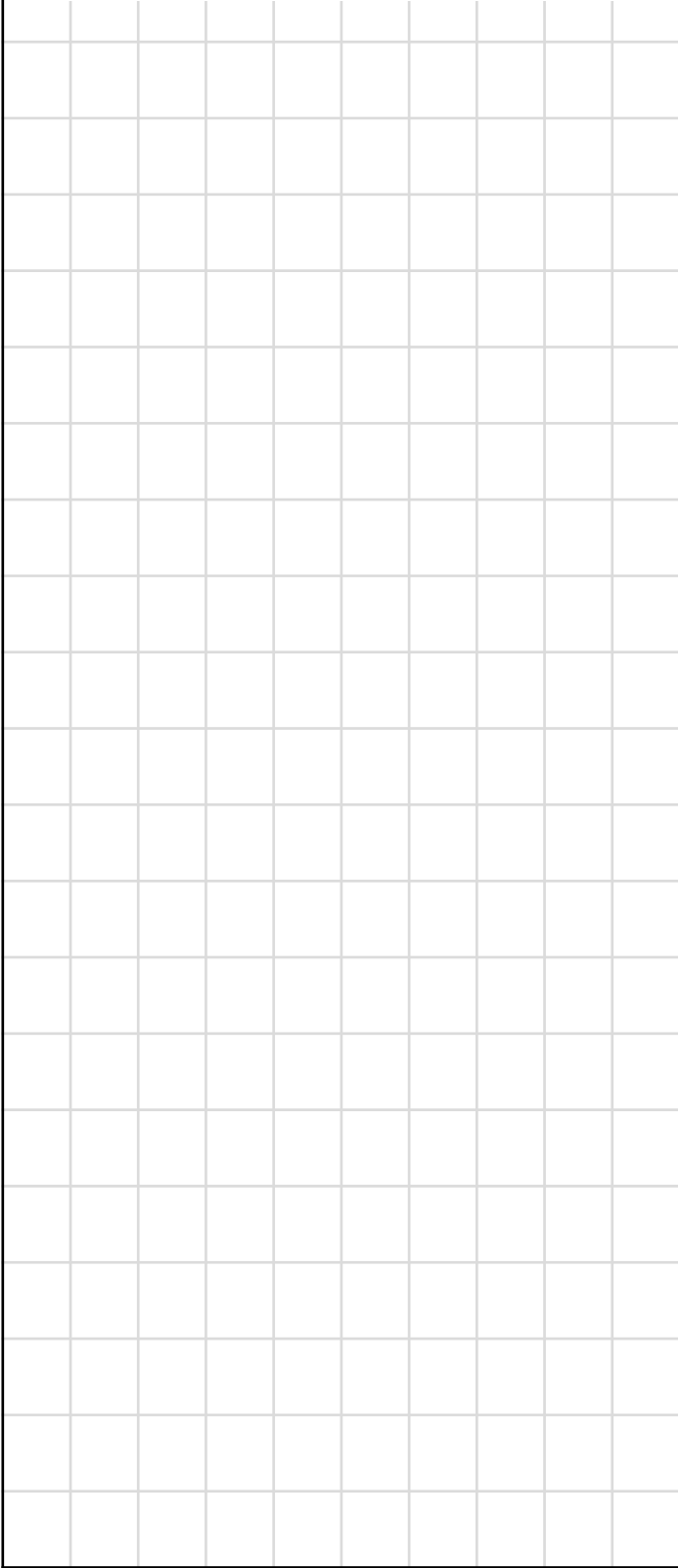
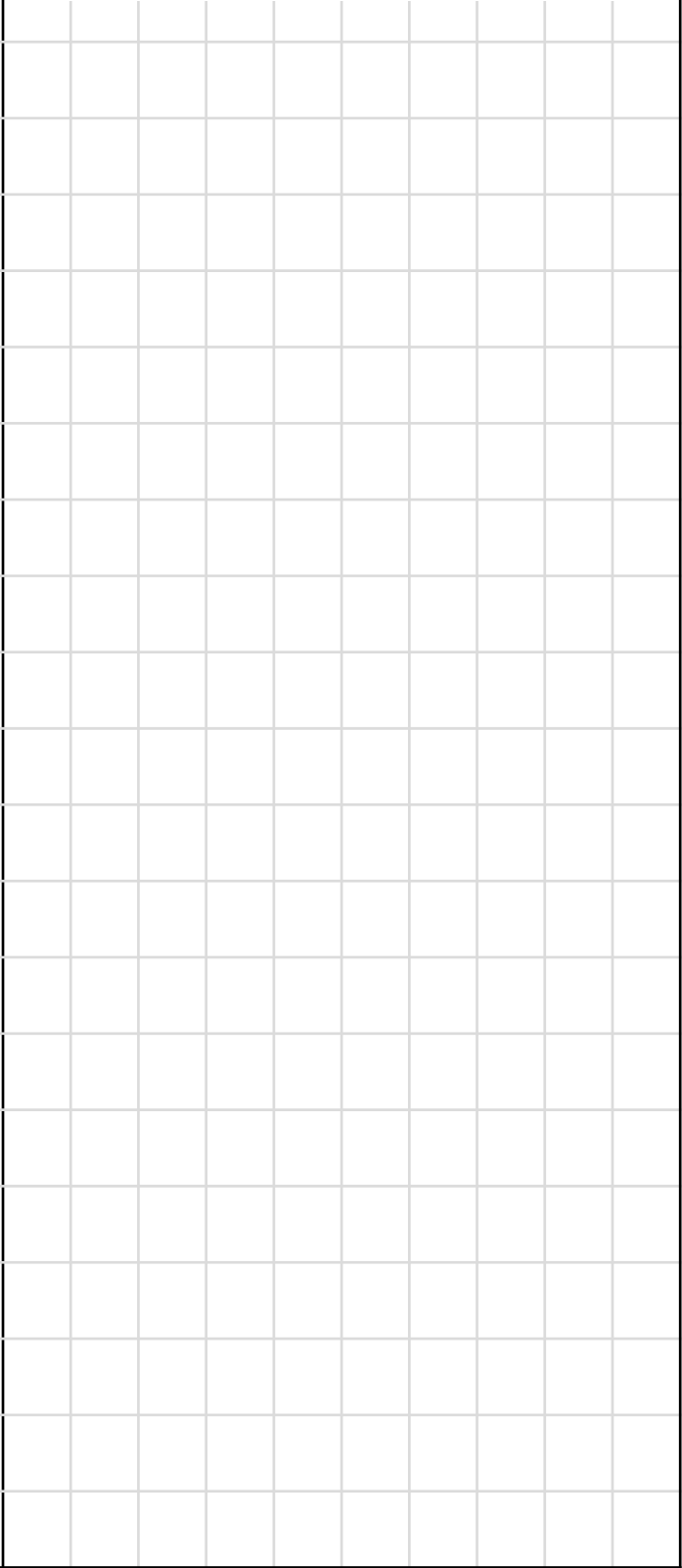
2.1 Ordering Negative Numbers

Worked Example	Your Turn
Write in ascending order: $-2, -1, 4, 3$ 	Write in ascending order: $-7, -8, 8, 7$ 

2.2 Ordering Decimals

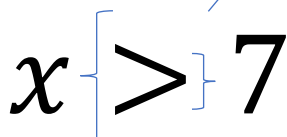
2.3 Ordering Fractions

2.4 Ordering FDP

Worked Example	Your Turn
Write in ascending order: $\frac{17}{25}$, 0.18, 90%, 81%, 0.39 	Write in ascending order: 27%, $\frac{79}{100}$, $\frac{9}{50}$, 0.91, 0.46 

2.5 Inequalities

Notice the symbol is taller on the side which is larger.

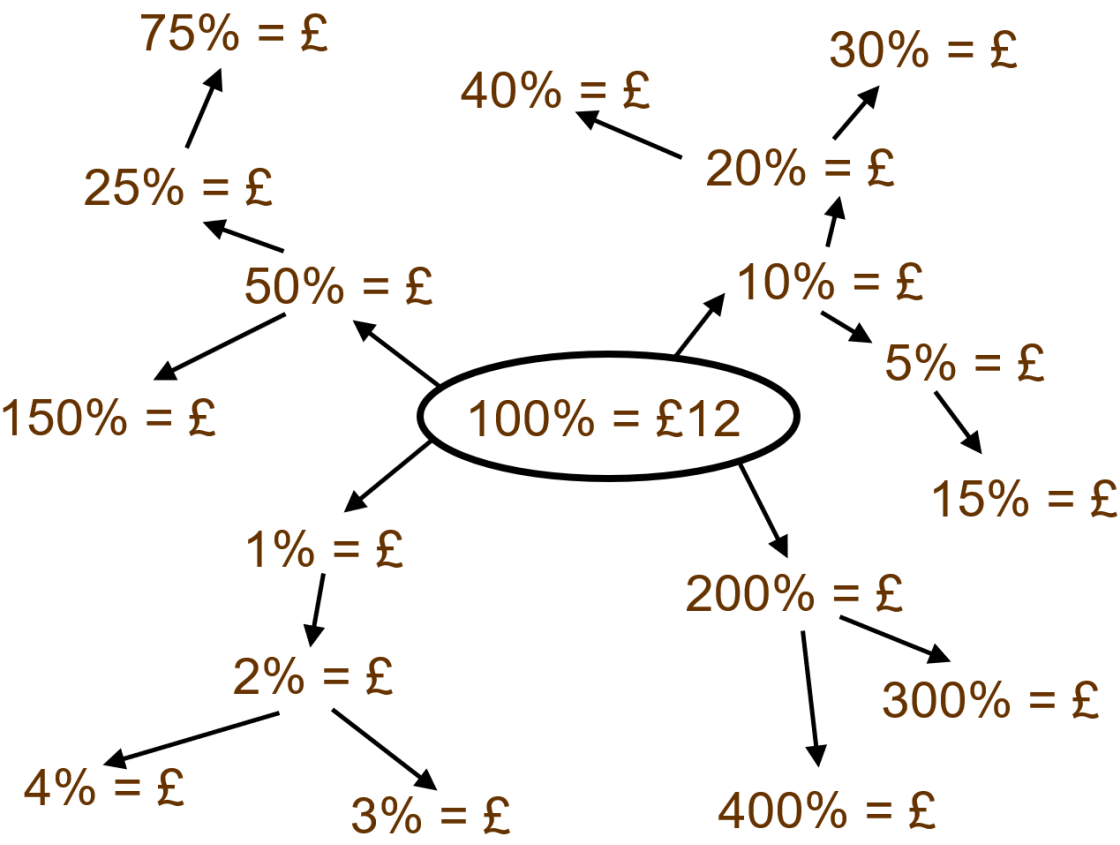

$$x \{ > \} 7$$

Inequality	What It Means
$x > 7$	"x is greater than 7" This doesn't include 7 Examples: 7.2, 10
$x \geq 7$	"x is greater than or equal to 7" or "x is at least 7" This does include 7 Examples: 7, 8, 100.5
$x < 10$	"x is less than 10" Examples: -3, 4, 9.2
$x \leq 8$	"x is less than or equal to 8" or "x is at most 8" Examples: 8, -3, 4, 7.2

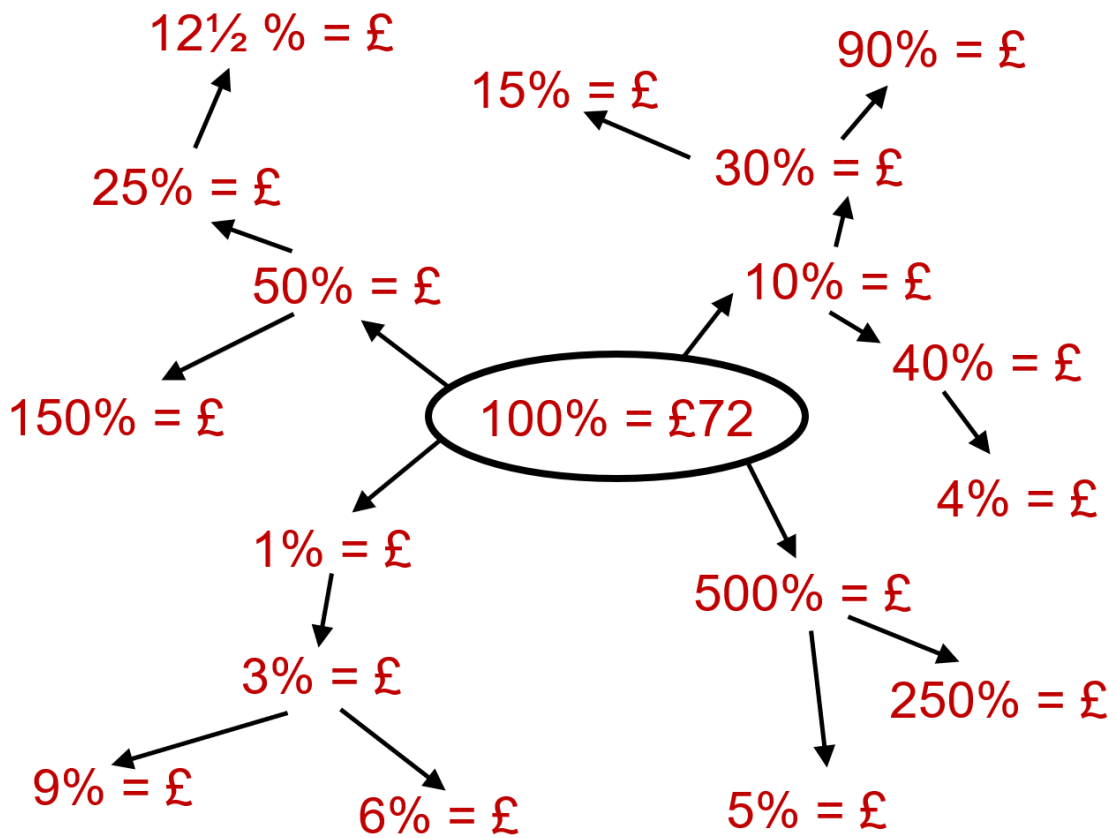
3 Percentages

3.1 Percentages of Amounts

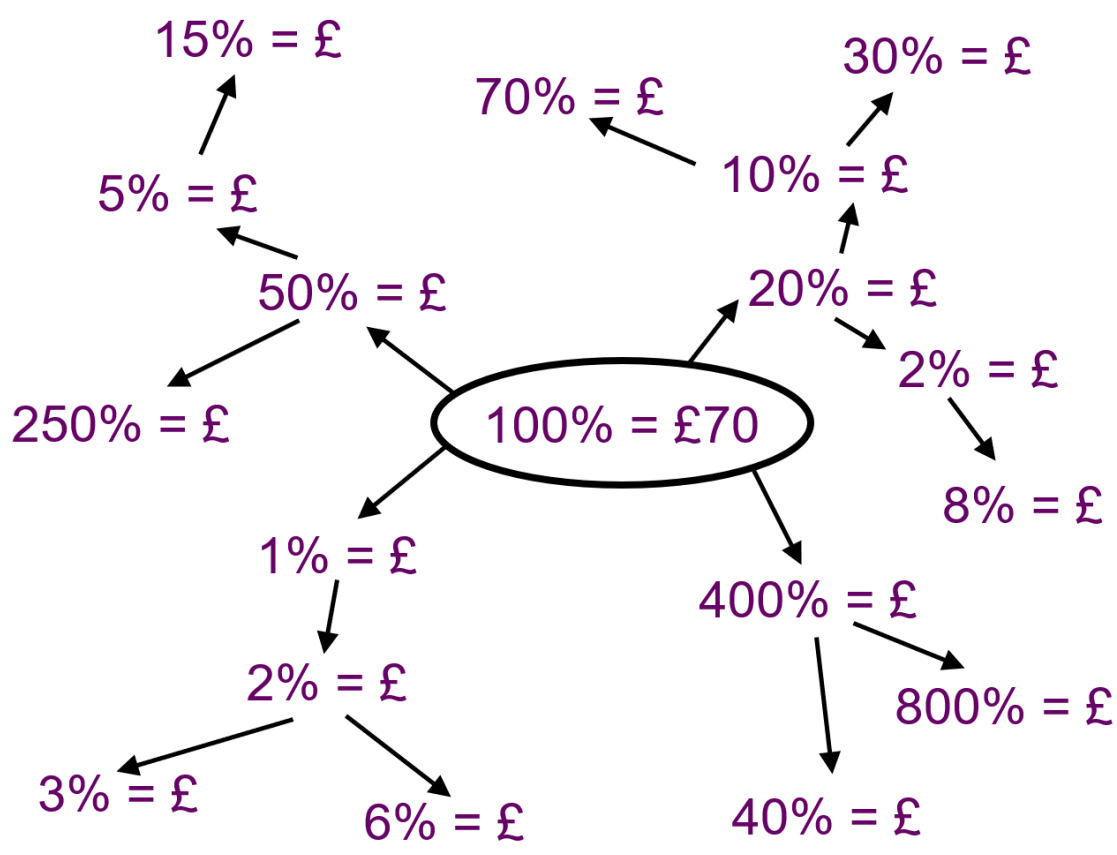
Worked Example



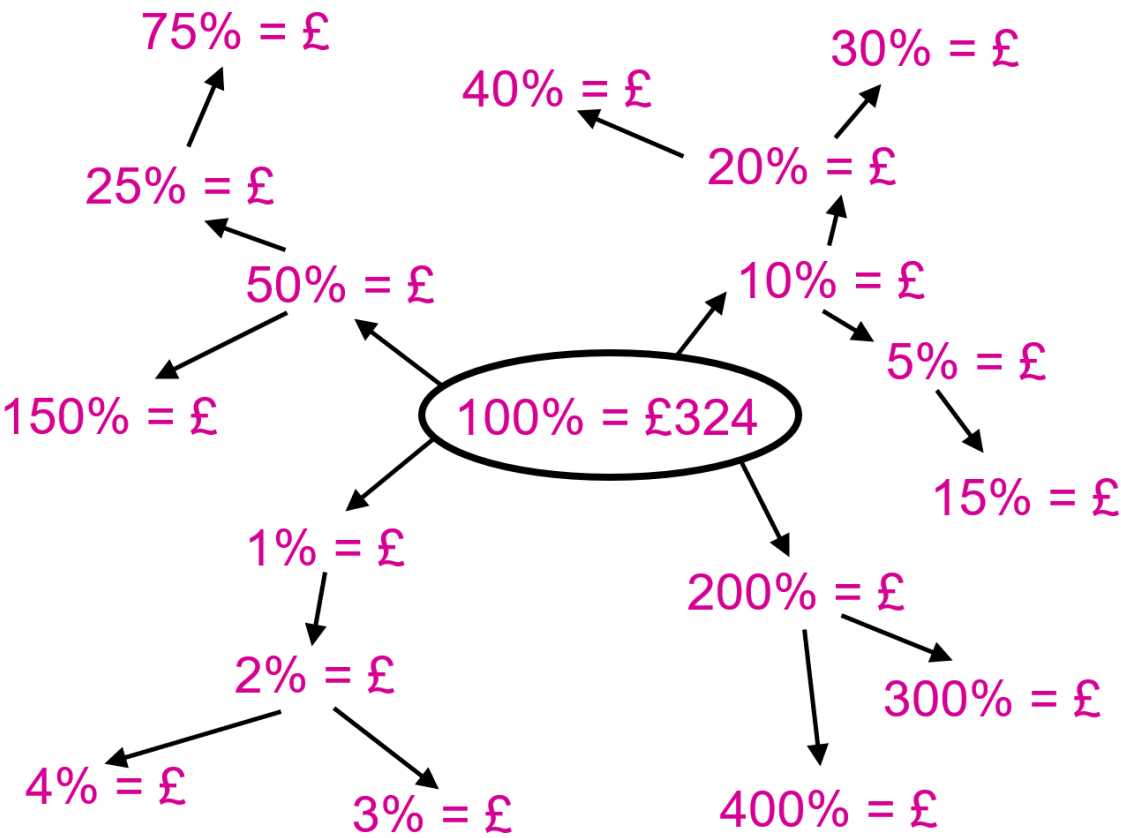
Your Turn



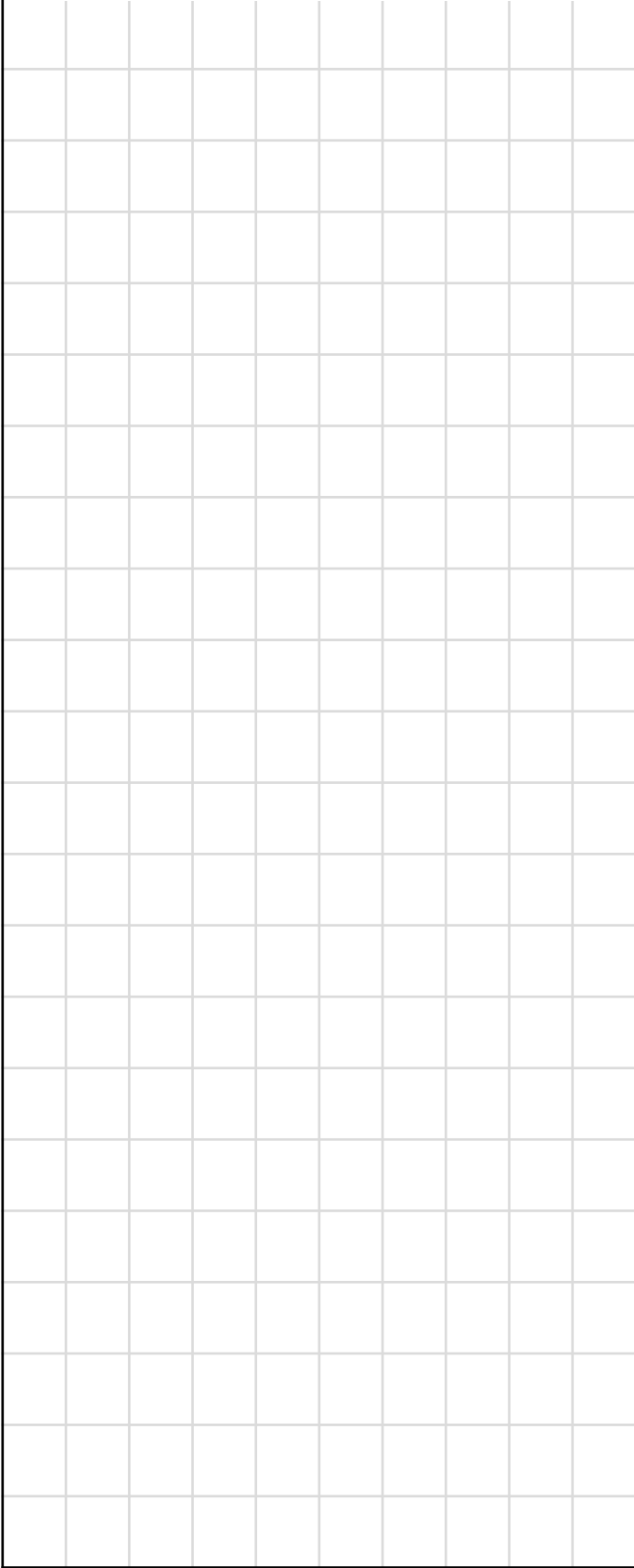
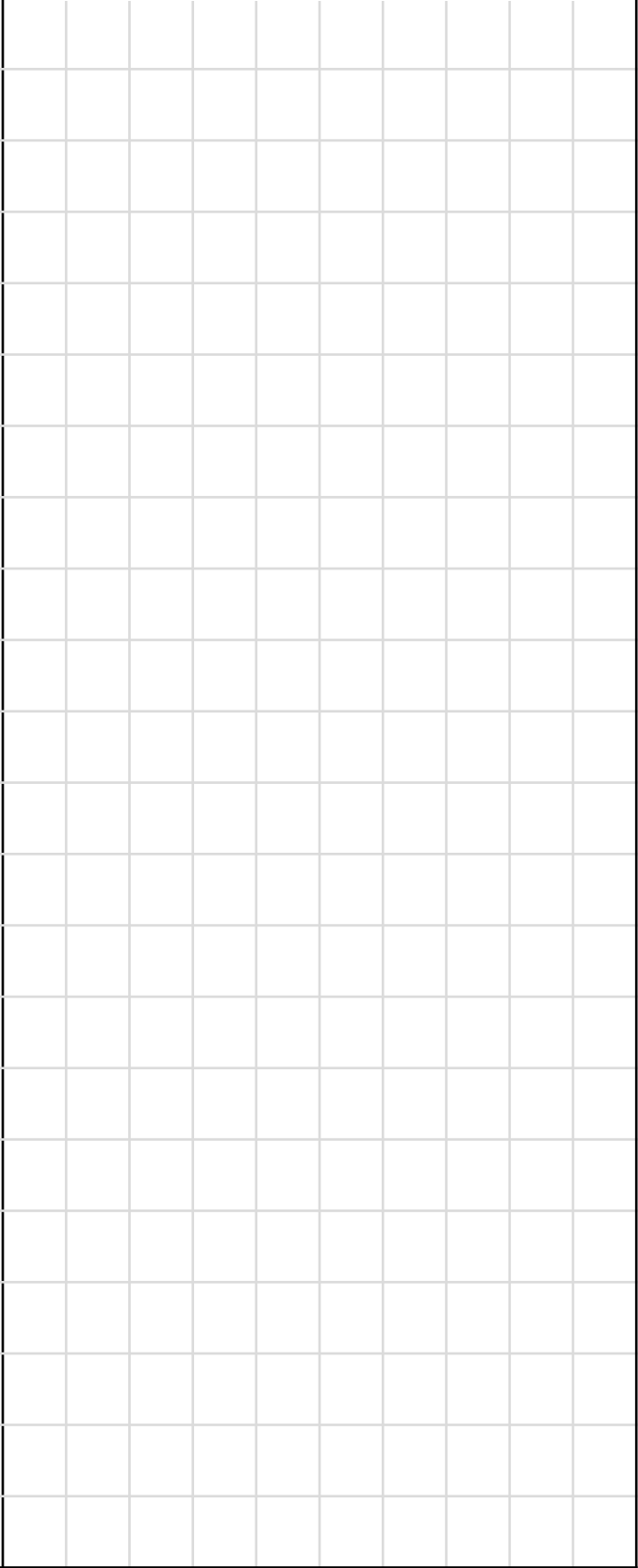
Your Turn



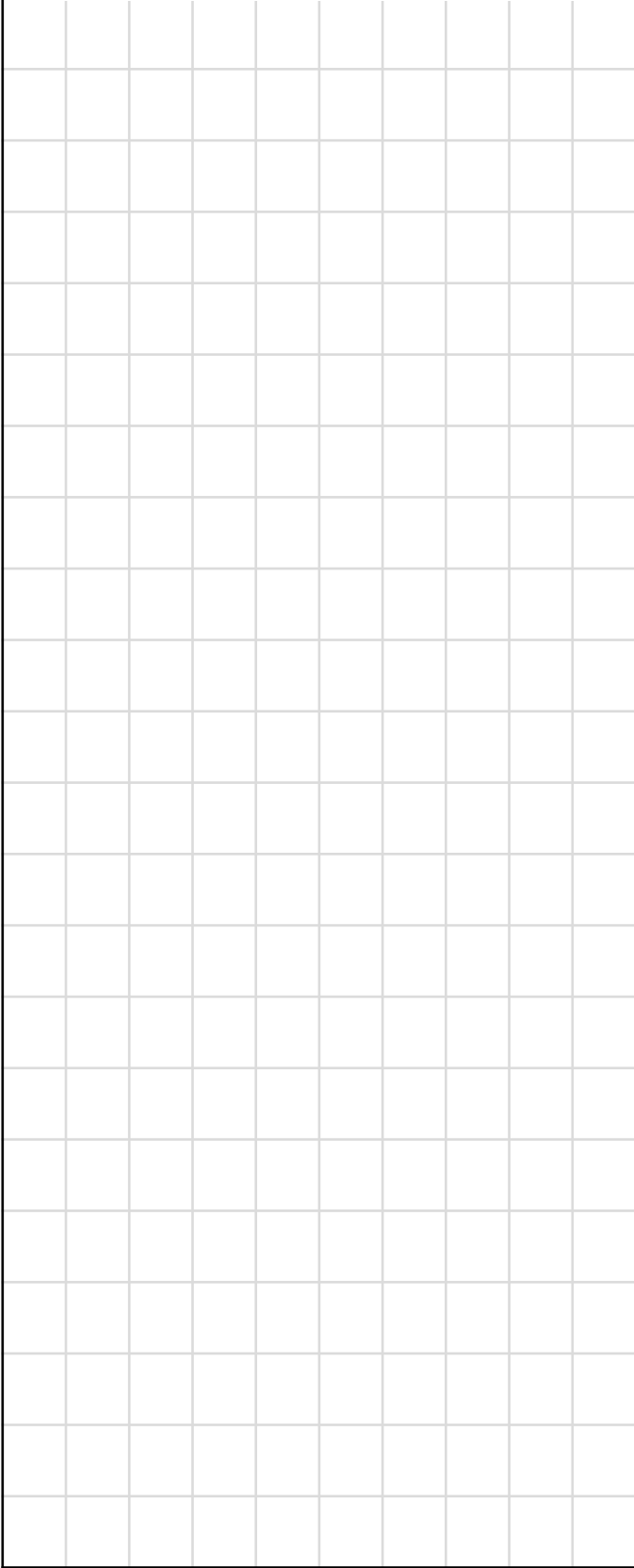
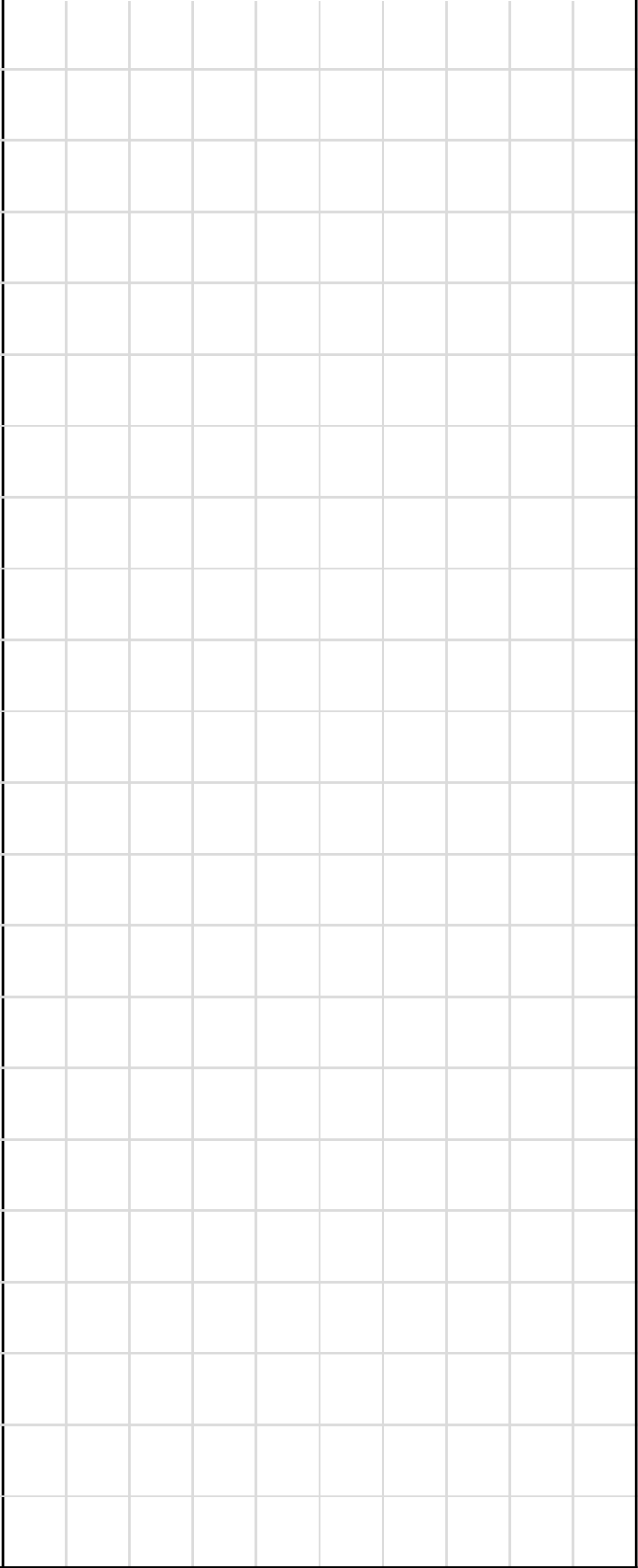
Your Turn



3.2 Percentage Increase

Worked Example	Your Turn
Increase 40 by 20% 	Increase 90 by 20% 

3.3 Percentage Decrease

Worked Example	Your Turn
Decrease 40 by 20% 	Decrease 90 by 20% 

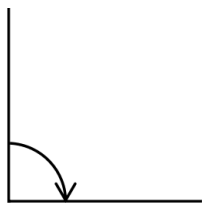
3.4 Percentage Change

3.5 Reverse Percentages

Worked Example	Your Turn
Given that 110% of a number is 66, work out the original number.	Given that 80% of a number is 240, work out the original number.

4 Angle Basics

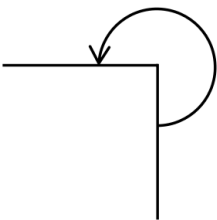
4.1 Types of Turns and Angles



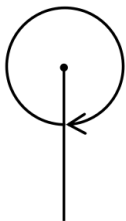
A quarter of a turn clockwise



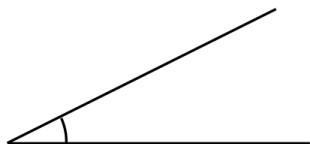
Half a turn anticlockwise



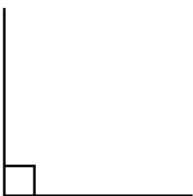
Three quarters of a turn anticlockwise



A full turn clockwise



Acute Angle



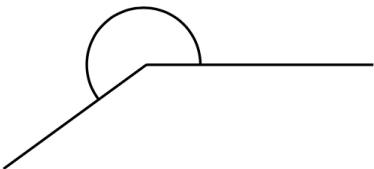
Right Angle



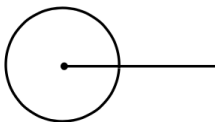
Obtuse Angle



Straight Line



Reflex Angle



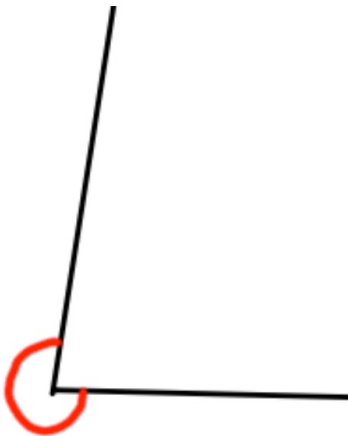
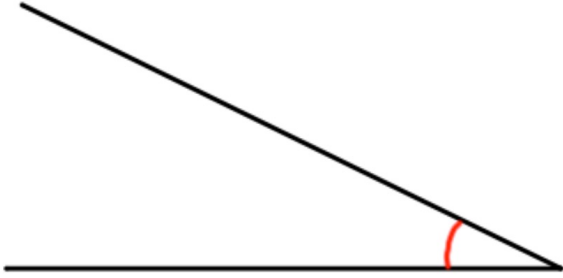
Full Turn

Acute $0^\circ < \theta < 90^\circ$	Right $90^\circ = \theta$	Obtuse $90^\circ < \theta < 180^\circ$	Straight $180^\circ = \theta$	Reflex $180^\circ < \theta < 360^\circ$	Full turn $360^\circ = \theta$
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4.2 Estimating Angles

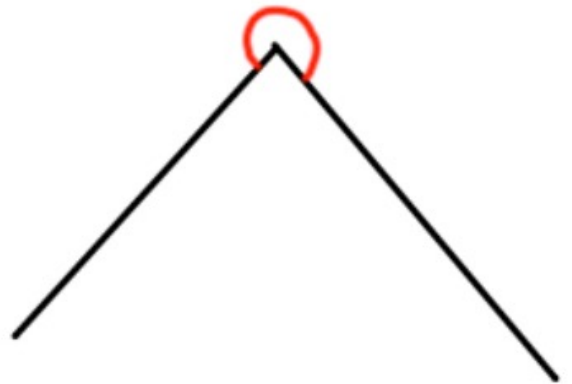
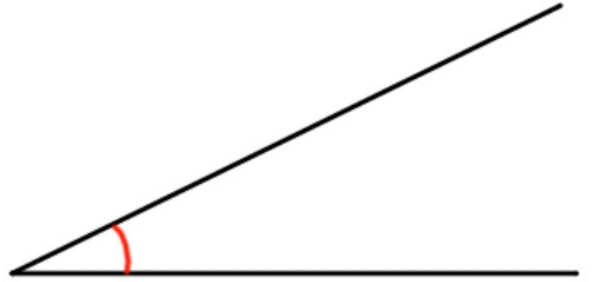
Worked Example

Estimate the angles below.



Your Turn

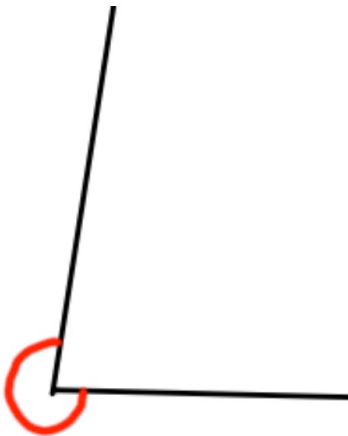
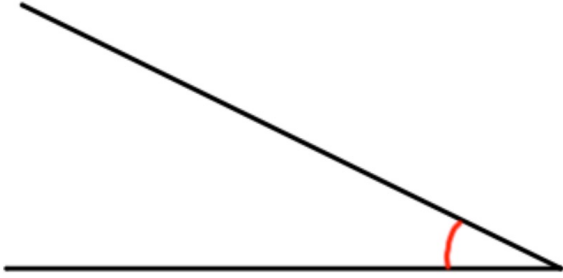
Estimate the angles below.



4.3 Measuring Angles

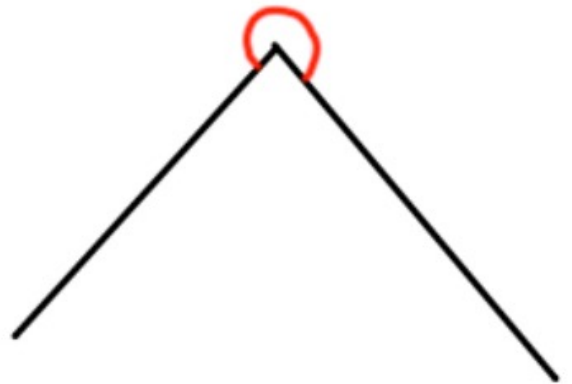
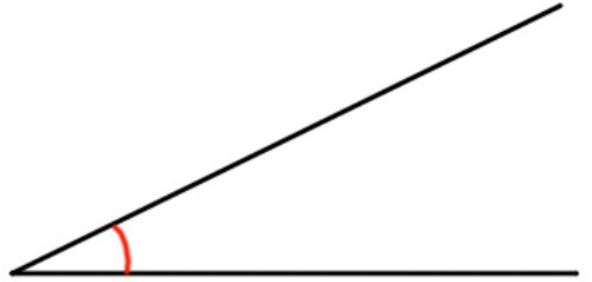
Worked Example

Measure the angles below.



Your Turn

Measure the angles below.



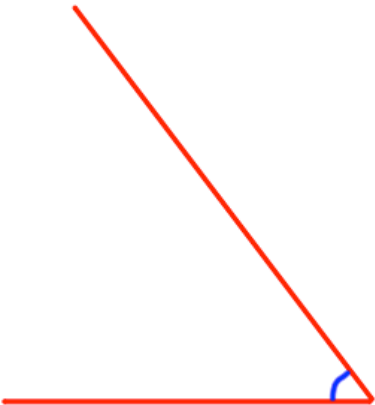
Fluency Practice

Question 2: Measure each angle below

(a)



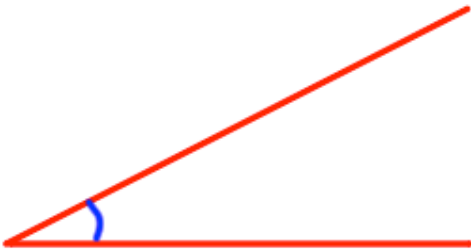
(b)



(c)



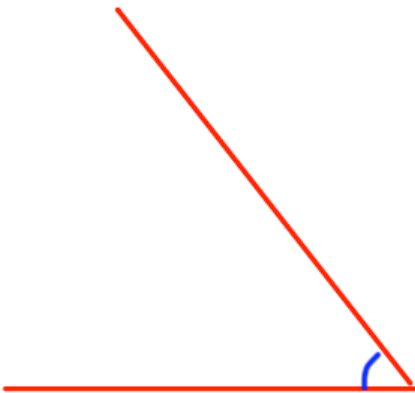
(d)



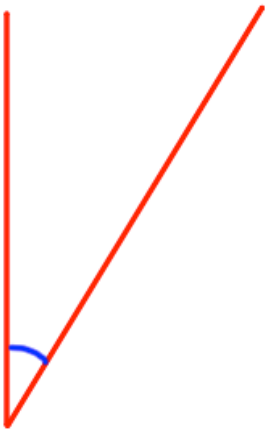
(e)



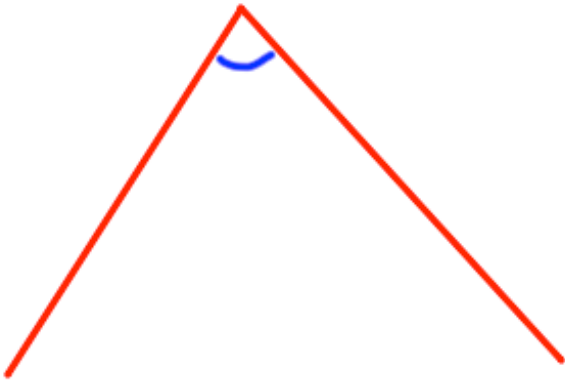
(f)



(g)



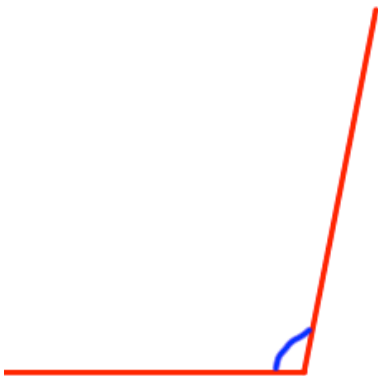
(h)



Fluency Practice

Question 3: Measure each angle below

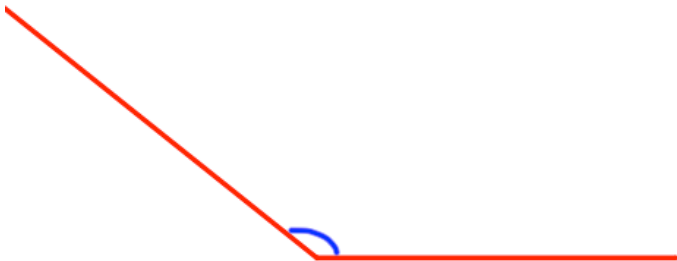
(a)



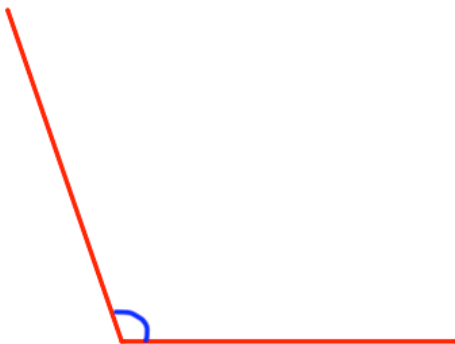
(b)



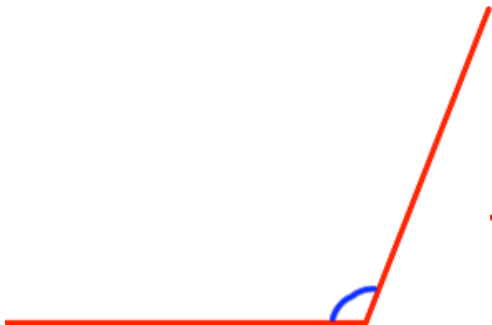
(c)



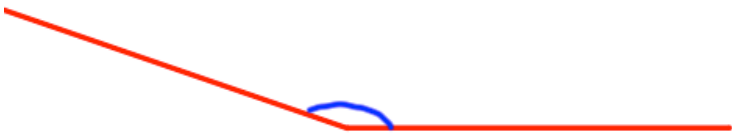
(d)



(e)



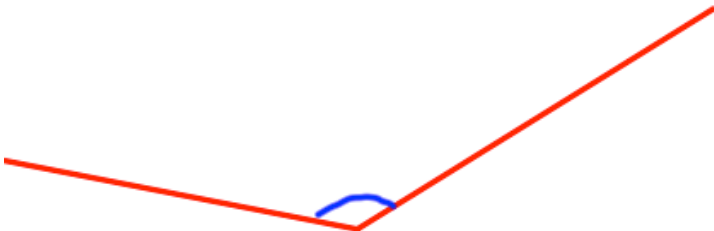
(f)



(g)



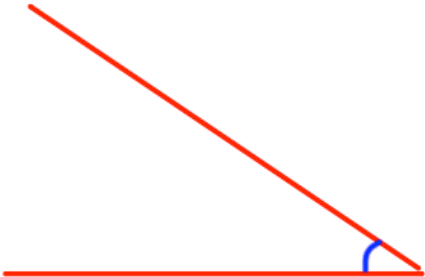
(h)



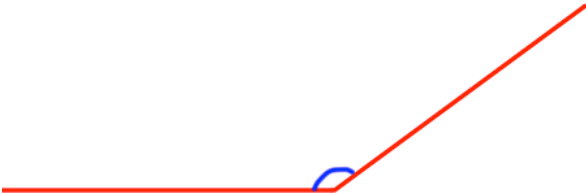
Fluency Practice

Question 4: Measure each angle below

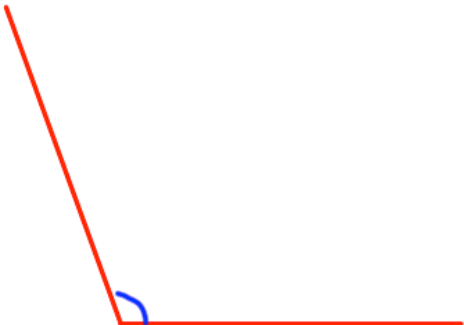
(a)



(b)



(c)



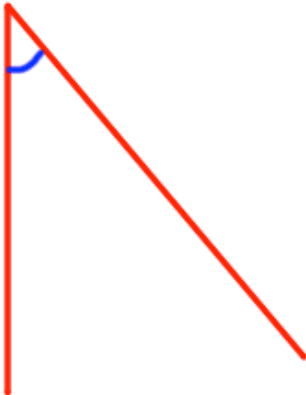
(d)



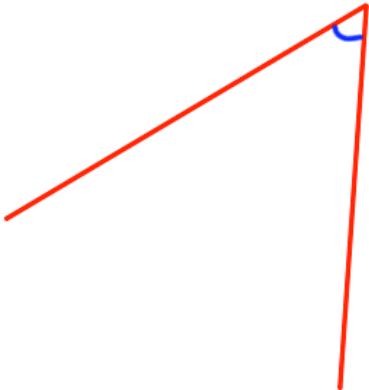
(e)



(f)



(g)



(h)



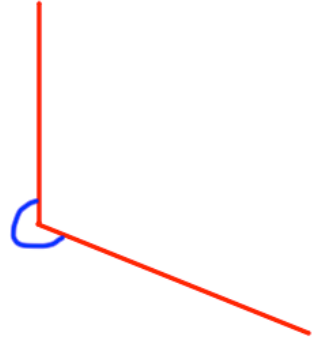
Fluency Practice

Question 5: Measure each reflex angle below

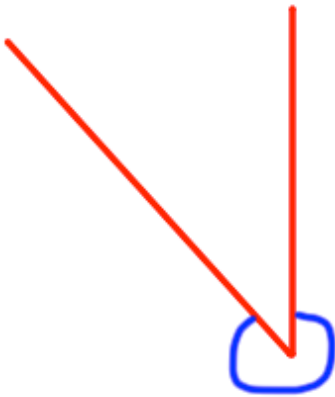
(a)



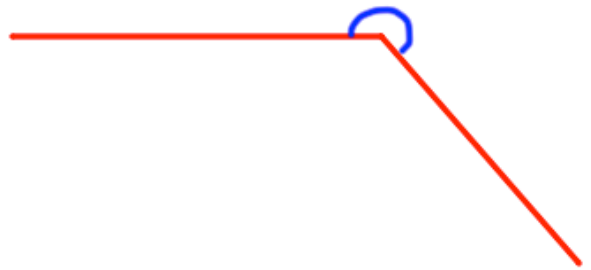
(b)



(c)



(d)

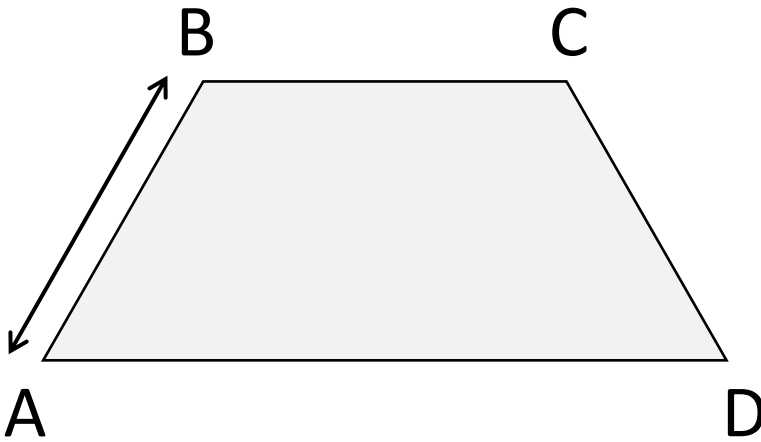


4.4 Drawing Angles

Worked Example	Your Turn
Draw an angle of 70° Draw an angle of 215°	Draw an angle of 80° Draw an angle of 225°

4.5 Notation and Labelling

Labelling Lengths



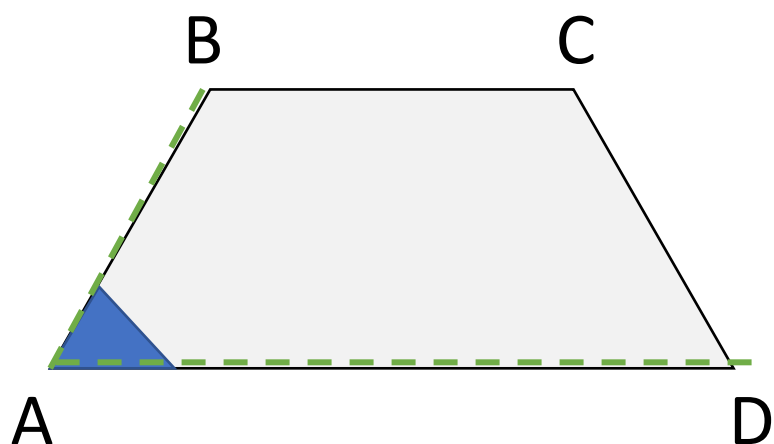
Each point (or corner) of a shape is labelled with a letter.

If we are talking about this distance...

We say we are looking for the length of AB

Because it is the distance between the point labelled A and the point labelled B

Labelling Angles



Each point (or corner) of a shape is labelled with a letter

If we are talking about this angle...

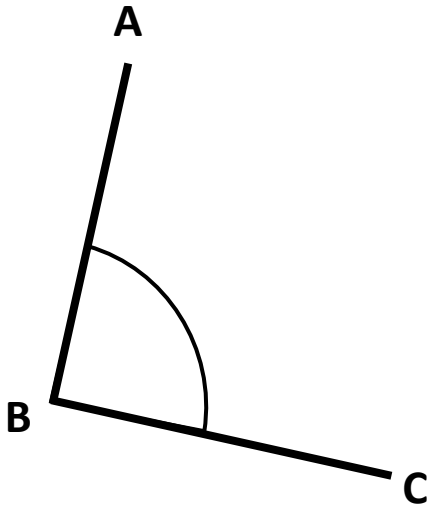
We say we are looking for the angle DAB

Because if we draw a line in order from point D to point A to point B, we draw around the angle

Angle Notation

We can label angles in multiple ways:

$\angle ABC$ or $\widehat{ABC}$ or *Angle ABC*



It can help to see these are instructions rather than labels:

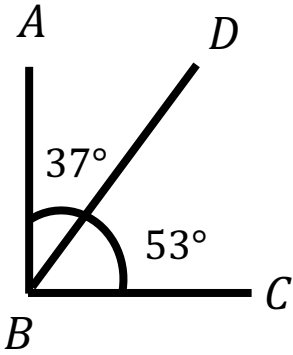
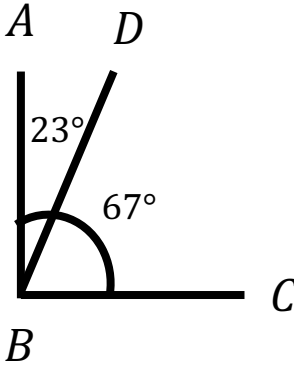
“The turn from line AB to line BC”

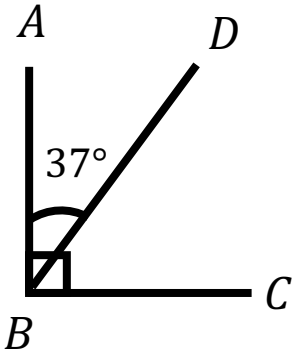
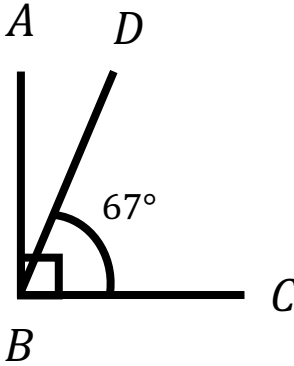
We don’t need to specify direction yet, so:

$\widehat{ABC} = \widehat{CBA}$

“The turn from line BC to line AB”

Note: We use capital letter for points.

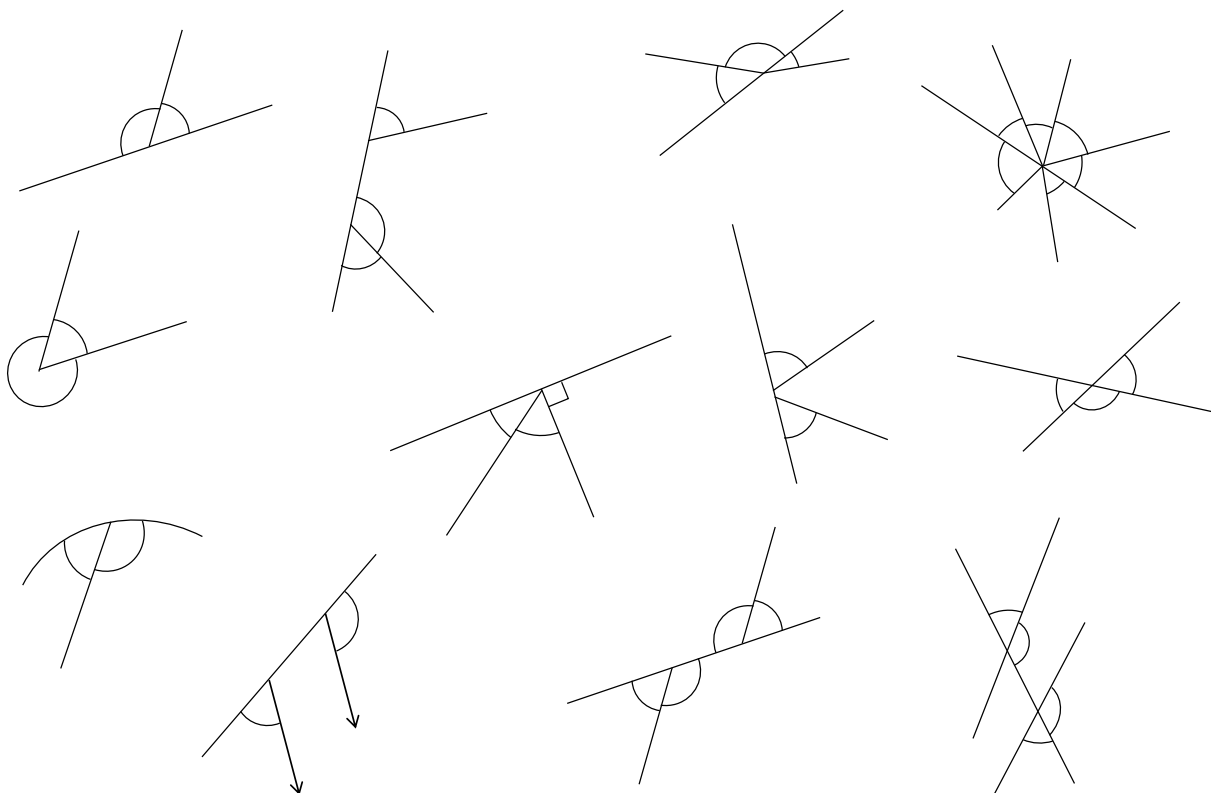
Worked Example	Your Turn
Write down the values of: $\angle ABD =$ $\angle DBC =$ $\angle ABC =$ 	Write down the values of: $\angle ABD =$ $\angle DBC =$ $\angle ABC =$ 

Worked Example	Your Turn
Write down the values of: $\angle ABD =$ $\angle ABC =$ $\angle DBC =$  The diagram shows a right angle $\angle ABC$ with vertex B. Ray BD lies between rays BA and BC. The angle $\angle ABD$ is labeled 37°. A right angle symbol is shown at vertex B between rays BA and BC.	Write down the values of: $\angle DBC =$ $\angle ABC =$ $\angle ABD =$  The diagram shows a right angle $\angle ABC$ with vertex B. Ray BD lies between rays BA and BC. The angle $\angle DBC$ is labeled 67°. A right angle symbol is shown at vertex B between rays BA and BC.

4.6 Angles on a Straight Line

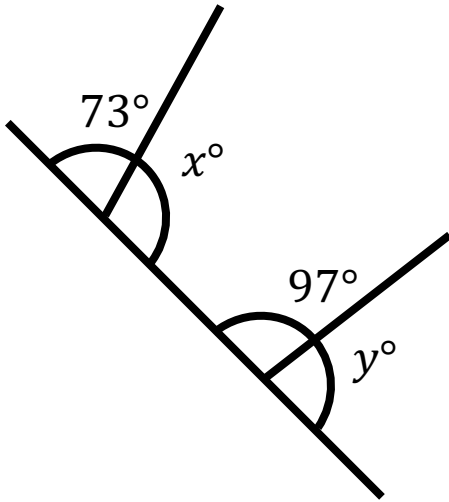
Highlight any angles that would add to 180°

Diagrams not drawn accurately



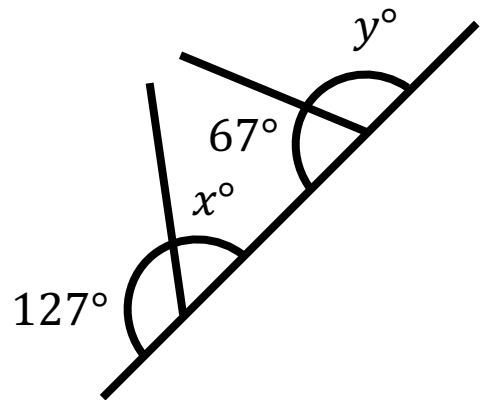
Worked Example

Find the values of x and y



Your Turn

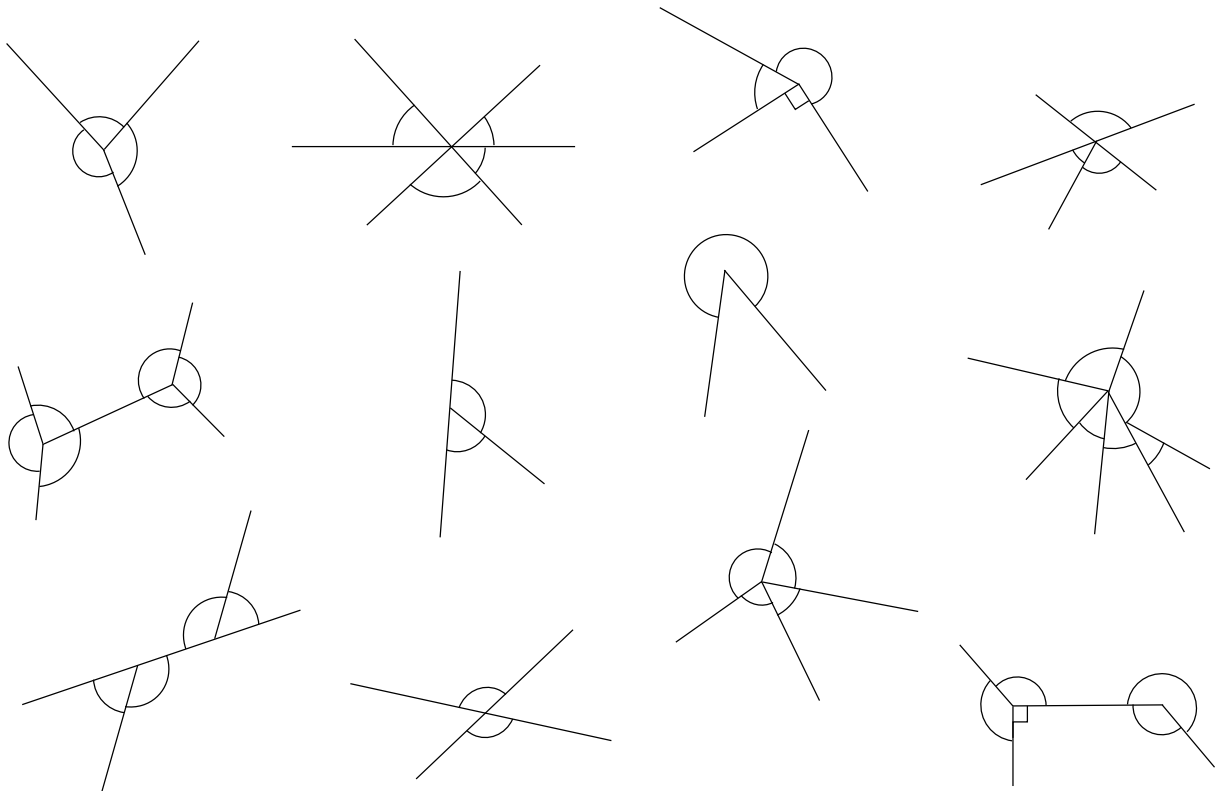
Find the values of x and y



4.7 Angles around a Point

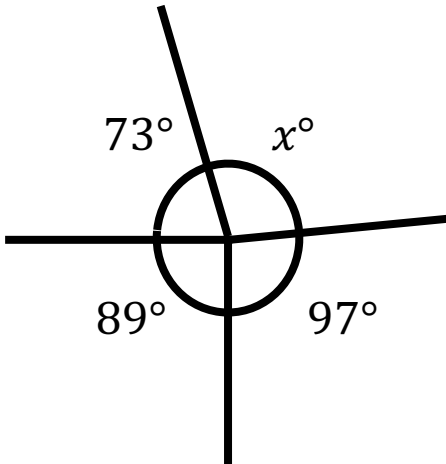
Highlight any angles that would add to 360°

Diagrams not drawn accurately



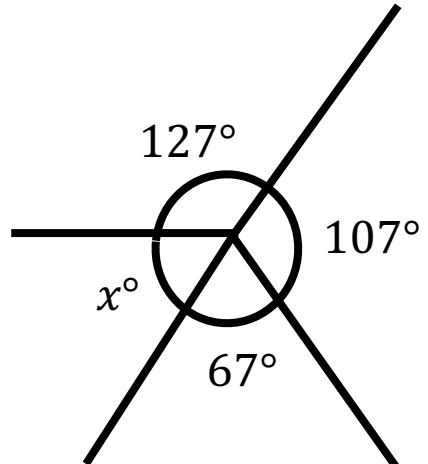
Worked Example

Find the value of x



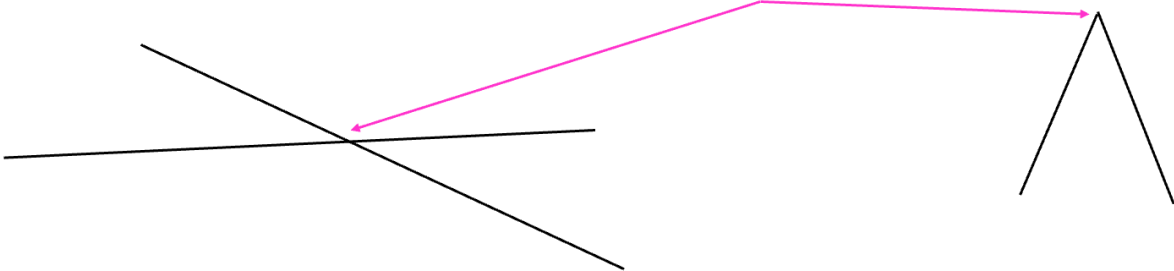
Your Turn

Find the value of x

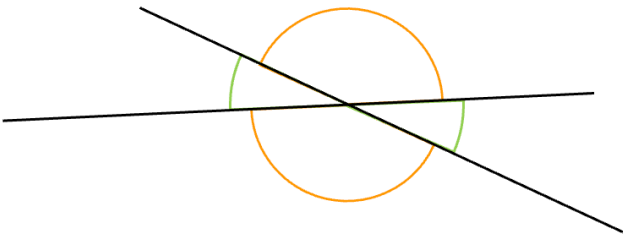


4.8 Vertically Opposite Angles

The point where two lines meet is called a vertex.



When two lines cross, they make four angles in vertically opposite pairs.



Decide which diagrams show vertically opposite angles

Diagrams not drawn accurately

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

Explain your reason

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

Explain your reason

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

Explain your reason

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

Explain your reason

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

Explain your reason

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

Explain your reason

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

Explain your reason

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

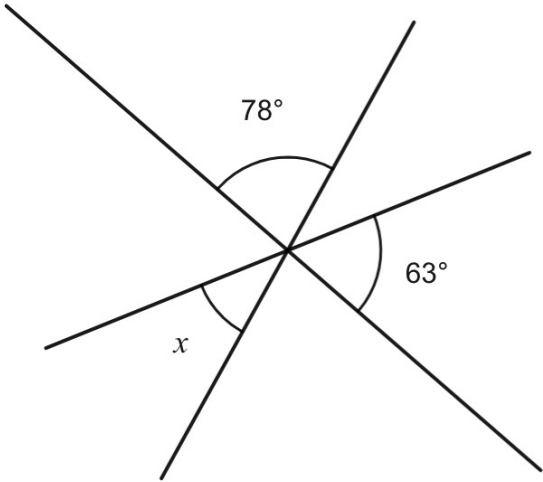
Explain your reason

Vertically Opposite	
Not Vertically Opposite	
Cannot Tell	

Explain your reason

Worked Example

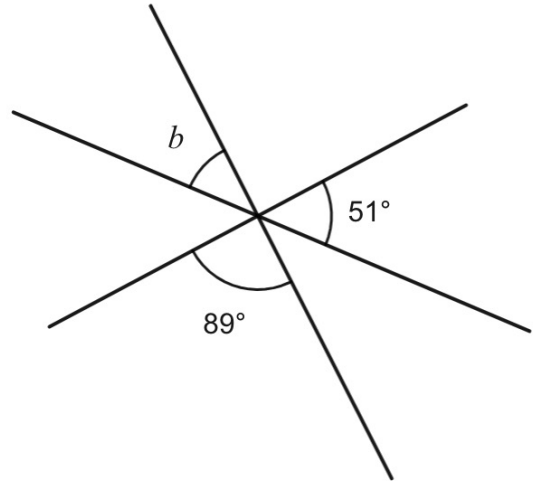
The diagram below shows three intersecting straight lines.



Find the value of x

Your Turn

The diagram below shows three intersecting straight lines.

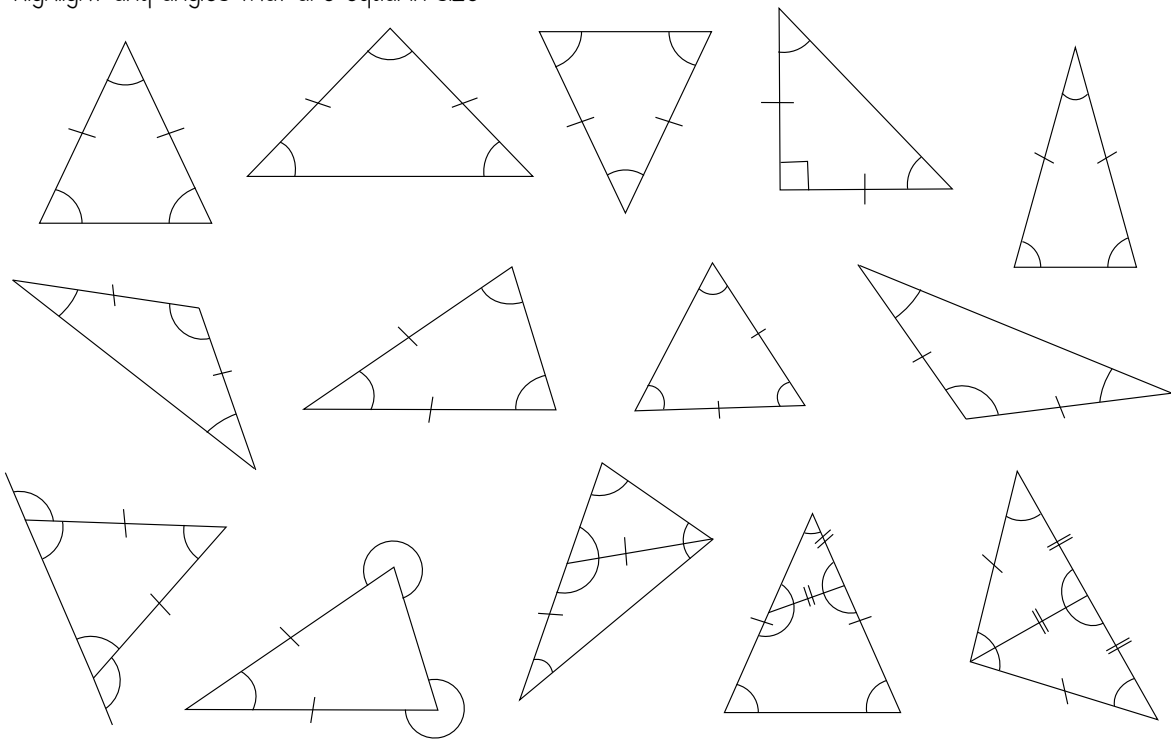


Find the value of b

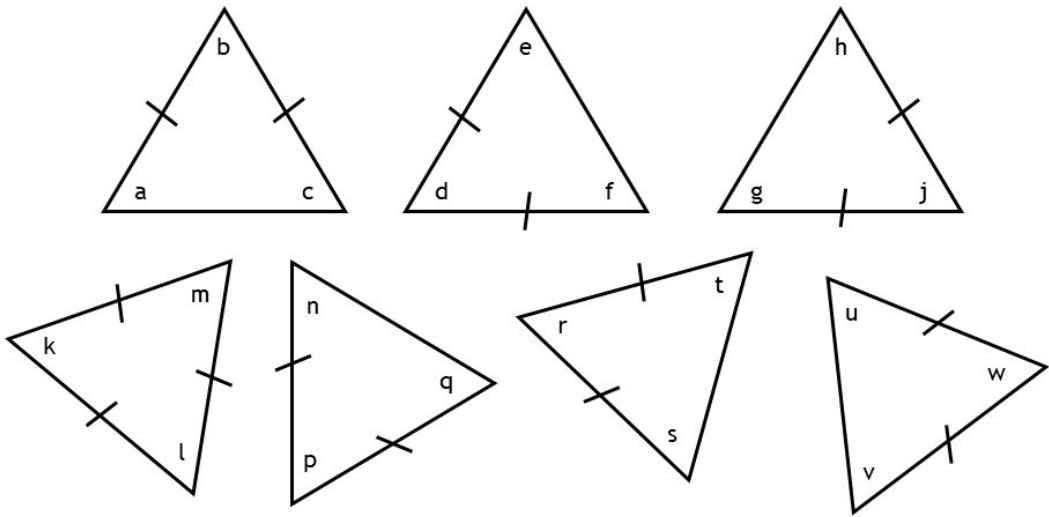
4.9 Angles in Triangles

Highlight any angles that are equal in size

Diagrams are not drawn accurately

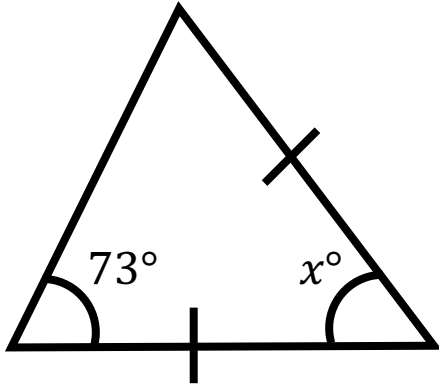


For each triangle, write down the letters of the angles with equal value.



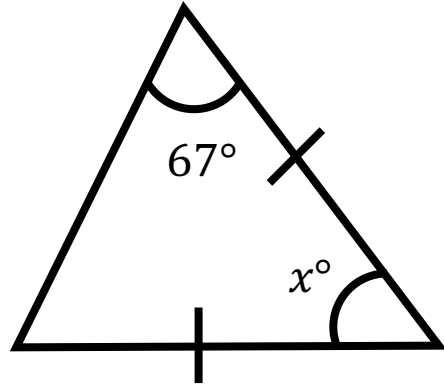
Worked Example

Find the value of x



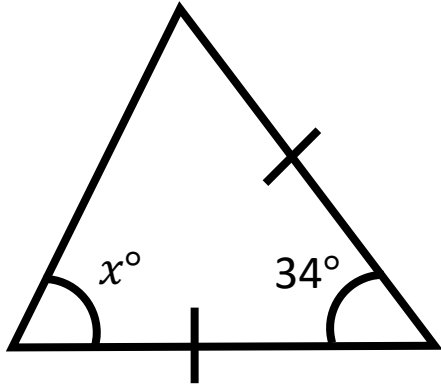
Your Turn

Find the value of x



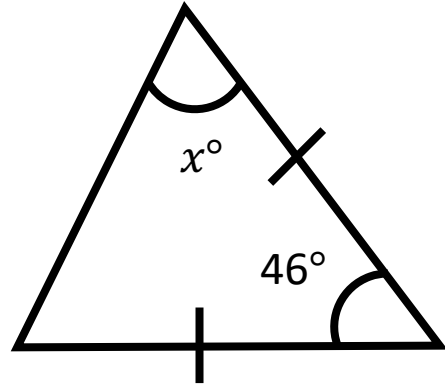
Worked Example

Find the value of x



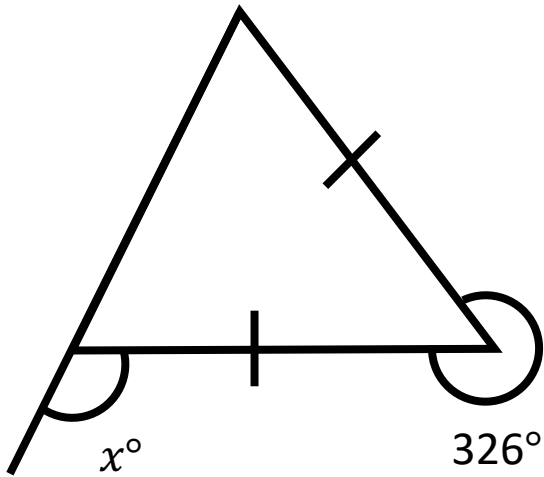
Your Turn

Find the value of x



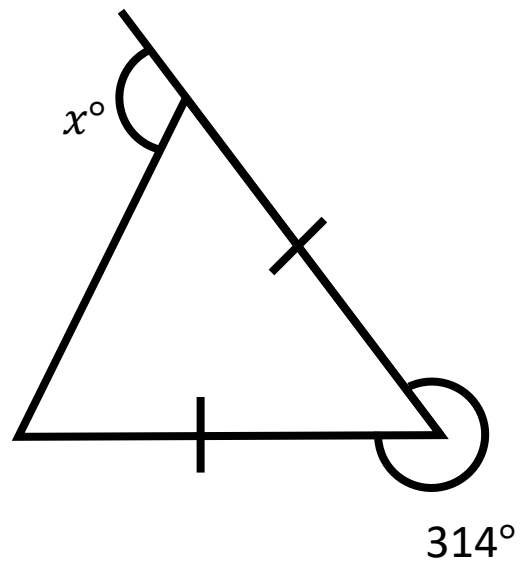
Worked Example

Find the value of x



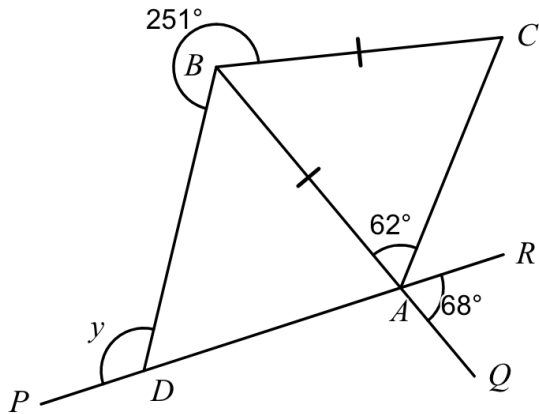
Your Turn

Find the value of x



Worked Example

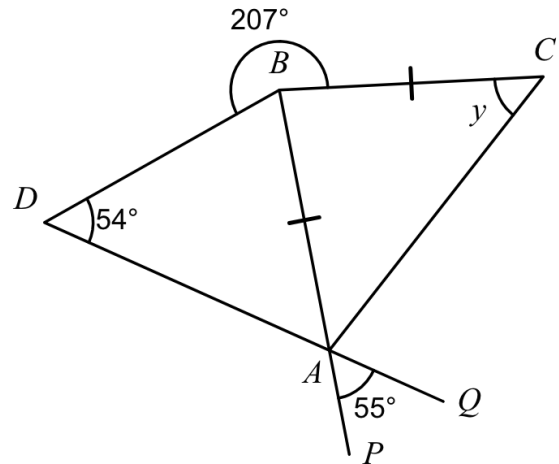
The diagram shows two triangles, ABC and ABD



ABC is an isosceles triangle.
 $RADP$ and BAQ are straight lines. Find the value of y

Your Turn

The diagram shows two triangles, ABC and ABD

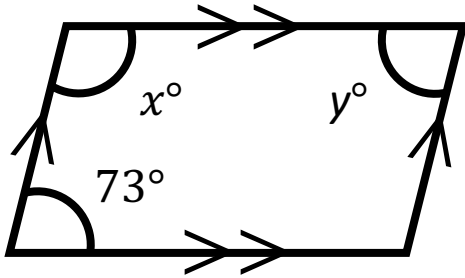


ABC is an isosceles triangle.
 BAP and DAQ are straight lines. Find the value of y

4.10 Angles in Quadrilaterals

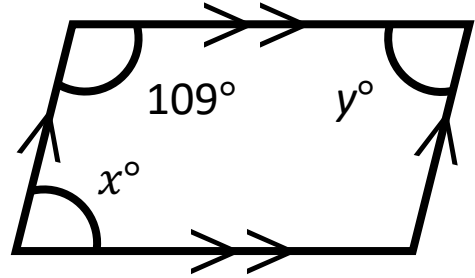
Worked Example

Find the values of x and y



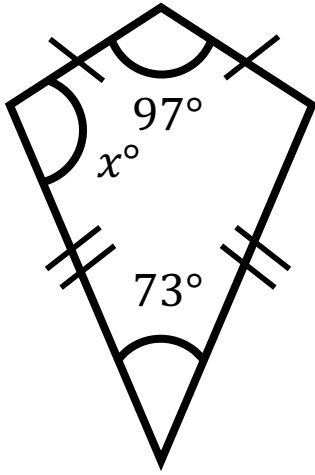
Your Turn

Find the values of x and y



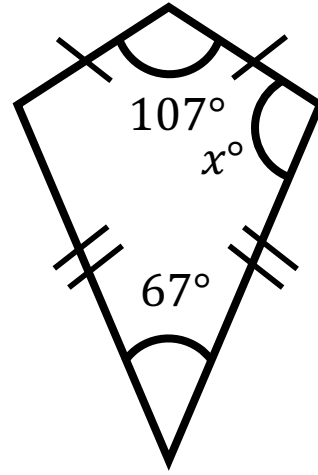
Worked Example

Find the value of x



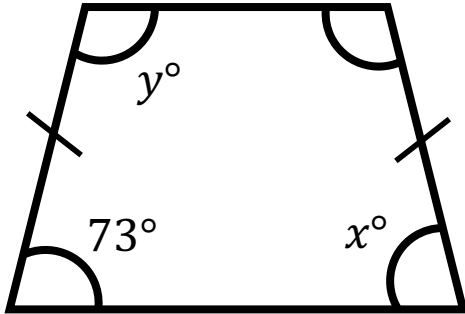
Your Turn

Find the value of x



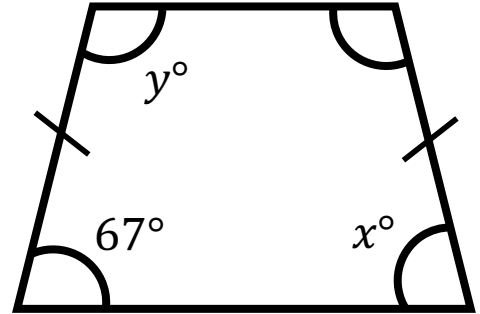
Worked Example

Find the values of x and y



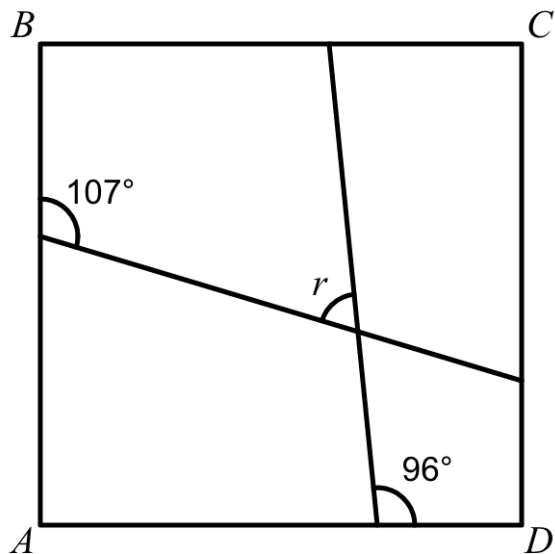
Your Turn

Find the values of x and y



Worked Example

Calculate the value of r , given that $ABCD$ is a square.



Your Turn

Calculate the value of r

