

Mathematics  
Mastery

# “Do Now” activities

Word problems  
(Using bar models)

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People in a group (ii)

Family age

# Do Now

## Rope problem (i)

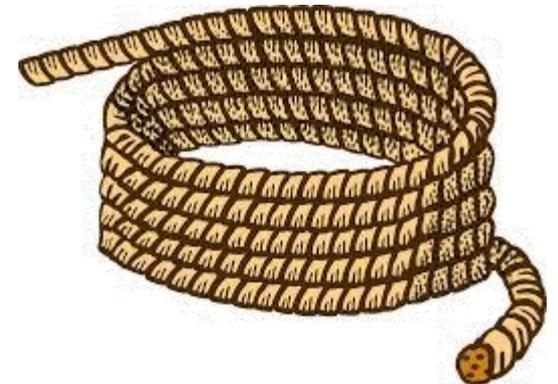
Tim had a rope that was 11 metres long.

He cut it into 3 pieces.

The first piece is 2.5 m longer than the second piece.

The third piece is 1 m longer than the second piece.

How long is the third piece of rope?



# Do Now

## Rope problem (ii)

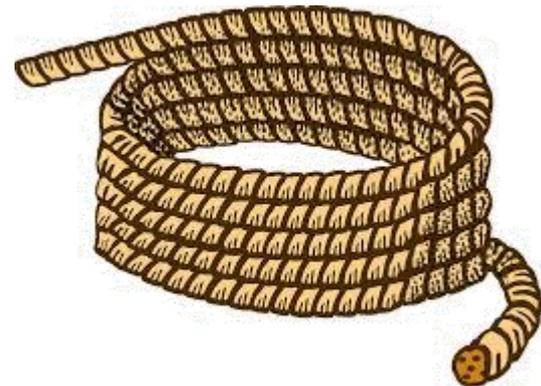
Tom had a rope that was 23 metres long.

He cut it into 3 pieces.

The first piece is 4.87 m longer than the second piece.

The third piece is 1.99 m longer than the second piece.

How long is the third piece of rope?



# Do Now

## Cake and coffee

The price of one slice of cake and one cup of coffee is £3.55.

The price of two slices of cakes and one cup of coffee is £6.25.

Work out the cost of one coffee.

Explain how you found your answer.



# Do Now

## Cinema tickets

Ali bought two cinema tickets and one bag of chocolates. The total cost was £30.

Sam bought one cinema ticket and three bags of chocolates. The total cost was £35.

What is the cost of one cinema ticket?



# Do Now

## Number problem

The sum of three numbers is 96. The largest number is 3 times as large as the smallest number.

The middle number is twice as large as the smallest number.

Find the value of the largest number.



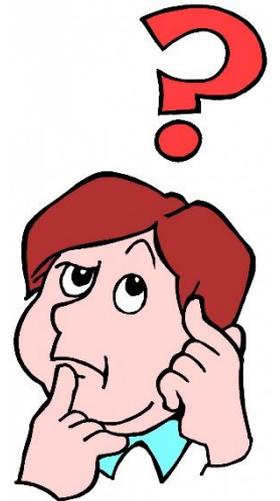
# Do Now

## People in a group (i)

There are a total of 28 children in a group.

There are 6 more girls than boys.

How many boys are there in the group?



# Do Now

## People in a group (ii)

There are a total of 28 children in a group.

There are 14 more girls than boys.

How many boys are there in the group?



# Do Now

## Family age

Mum is 28 years older than Charlotte.

Mum is 4 years younger than Dad.

Their total age 84 years.

What is Mum's age?



# Solutions

Sample solutions have been provided for each of the Do Now problems. These demonstrate just one way of working out the answer for each question.

**We do not recommend** teachers ‘click through’ the answers provided whilst in class.

**We do recommend:**

- using these Do Now solutions as a **point of reference** whilst **planning lessons**.
- encouraging students to construct their own models and give reasons for their answers.

# Solution: Rope problem (i)

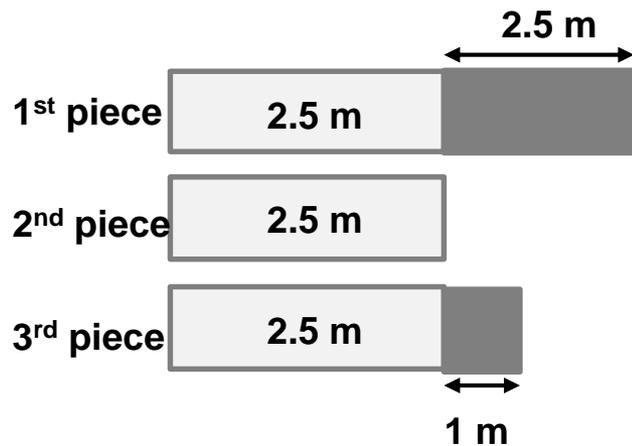
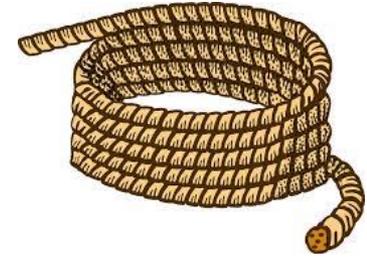
Tim had a rope that was 11 metres long.

He cut it into 3 pieces.

The first piece is 2.5 m longer than the second piece.

The third piece is 1 m longer than the second piece.

How long is the third piece of rope?



$$11 - (2.5 + 1) = 7.5$$

$$7.5 \div 3 = 2.5$$

The 3<sup>rd</sup> piece of rope:  $2.5 + 1 = 3.5$  m

# Solution: Rope problem (ii)

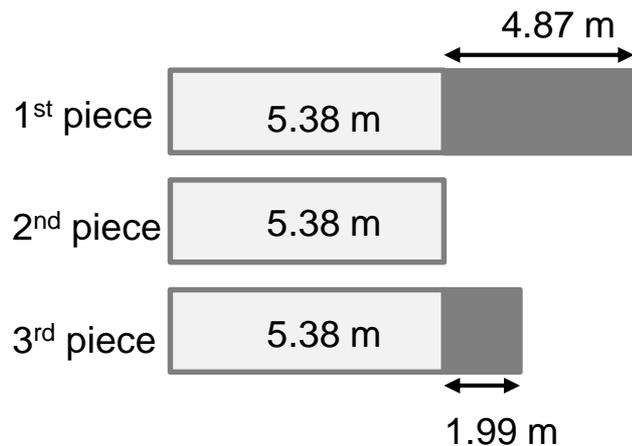
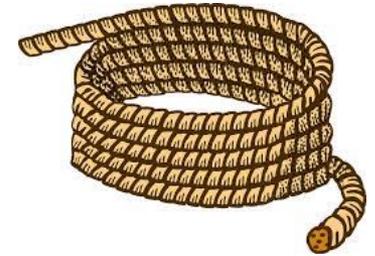
Tim had a rope that was 23 metres long.

He cut it into 3 pieces.

The first piece is 4.87 m longer than the second piece.

The third piece is 1.99 m longer than the second piece.

How long is the third piece of rope?



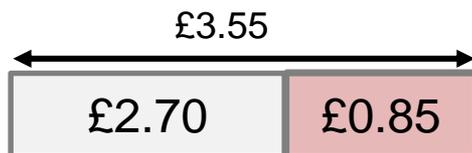
$$23 - (4.87 + 1.99) = 16.14$$

$$16.14 \div 3 = 5.38$$

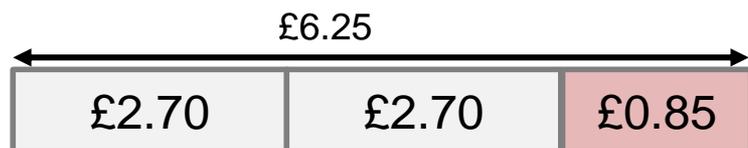
The 3<sup>rd</sup> piece of rope:  $5.38 + 1.99 = 7.37$  m

# Solution: Coffee and cake

The price of one slice of cake and one cup of coffee is £3.55.  
The price of two slices of cakes and one cup of coffee is £6.25.  
Work out the cost of one coffee.  
Explain how you found your answer.



$$1 \text{ cake: } £6.25 - £3.55 = £2.70$$



$$1 \text{ coffee: } £3.55 - £2.70 = 85 \text{ pence}$$

# Solution: Cinema tickets

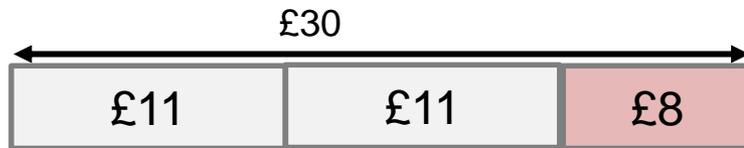
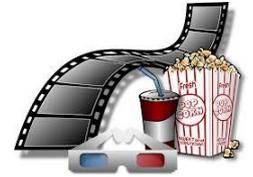
Ali bought two cinema tickets and one bag of chocolates.

The total cost was £30.

Sam bought one cinema ticket and three bags of chocolates.

The total cost was £35.

What is the cost of one cinema ticket?



1 bag of chocolate:

$$£70 - £30 = £40$$

$$£40 \div 5 = £8$$

$$1 \text{ cinema ticket: } (\mathbf{£30} - \mathbf{£8}) \div \mathbf{2} = \mathbf{£11} \quad \text{or} \quad \mathbf{£35} - 3 \times \mathbf{£8} = \mathbf{£11}$$

# Solution: Number problem

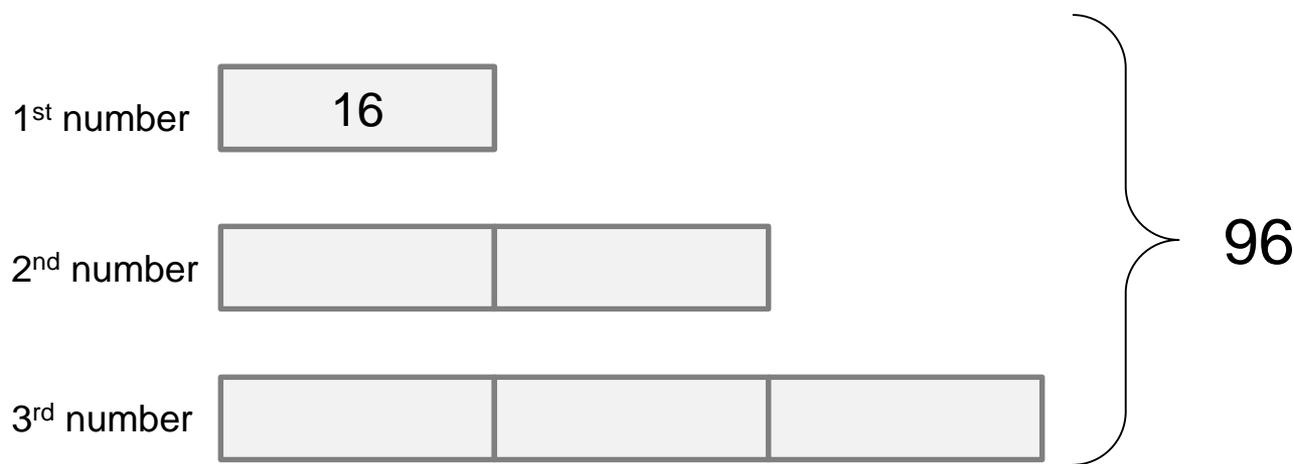
The sum of three numbers is 96.

The largest number is 3 times as large as the smallest number.

The middle number is twice as large as the smallest number.



Find the value of the largest number.

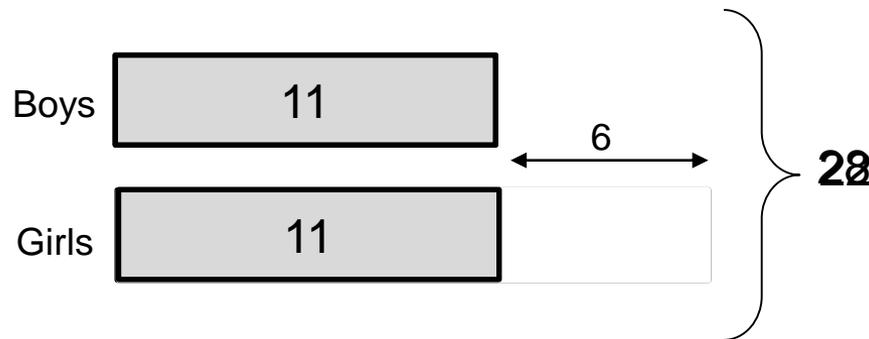
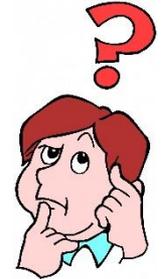


Smallest number:  
 $96 \div 6 = 16$

Largest number:  $16 \times 3 = 48$  or  $96 \div 2 = 48$

# Solution: People in a group (i)

There are a total of 28 children in a group.  
There are 6 more girls than boys.  
How many boys are there in the group?



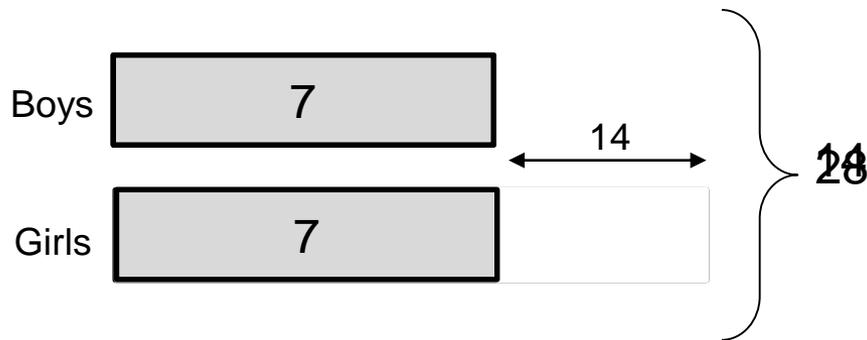
$$28 - 6 = 22$$

$$22 \div 2 = 11$$

**11 boys in the group**

# Solution: People in a group (ii)

There are a total of 28 children in a group.  
There are 14 more girls than boys.  
How many boys are there in the group?



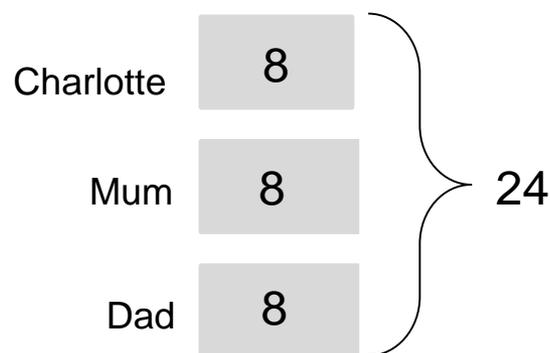
$$28 - 14 = 14$$

$$14 \div 2 = 7$$

**7 boys in the group**

# Solution: Family age

Mum is 28 years older than Charlotte.  
Mum is 4 years younger than Dad.  
Their total age 84 years.  
What is Mum's age?



$$84 - 28 - 28 - 4 = 24$$

$$24 \div 3 = 8$$

**Mum's age:  $28 + 8 = 36$**