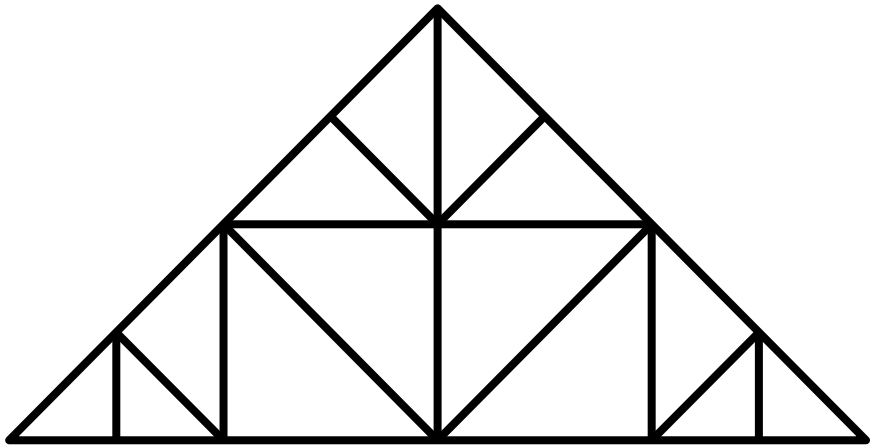
Bishop Stopford's Numeracy Challenge

Core Numeracy Problem



How many triangles are there in this diagram?

Extension Numeracy Problem

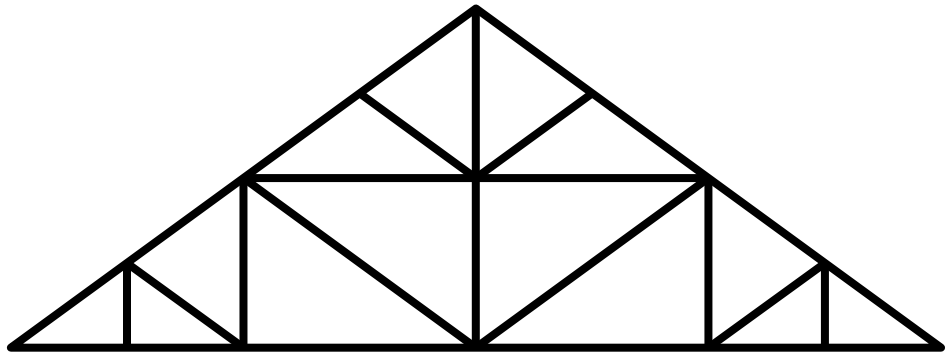
Frank and Gabriel competed in a 200m race. Gabriel finished in half a minute and Frank finished in one hundredth of an hour.

Who won the race and by how many seconds?

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 1

Core Numeracy Problem



How many triangles are there in this diagram?

29 triangles

Extension Numeracy Problem

Half a minute = 30 seconds

60 x 60 = 3600 seconds in an hour

3600/ 100 = 36 seconds

Therefore Gabriel wins by 6 seconds

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 1 ANSWERS

Core Numeracy Problem

You have a basket containing ten apples. You have ten friends, who each desire an apple. You give each of your friends one apple.

After a few minutes each of your friends has one apple each, yet there is an apple remaining in the basket.

Extension Numeracy Problem

Haretown and Tortoiseville are 60 miles apart. A hare travels at 9 miles per hour from Haretown to Tortoiseville, while a tortoise travels at 3 miles per hour from Tortoiseville to Haretown.

If both set out at the same time, how many miles will the hare have to travel before meeting the tortoise en route?

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 2

Core Numeracy Problem

You have a basket containing ten apples. You have ten friends, who each desire an apple. You give each of your friends one apple.

After a few minutes each of your friends has one apple each, yet there is an apple remaining in the basket, How?

All of the friends get an apple each and the last one is given the apple and the basket

Extension Numeracy Problem

Haretown and Tortoiseville are 60 miles apart. A hare travels at 9 miles per hour from Haretown to Tortoiseville, while a tortoise travels at 3 miles per hour from Tortoiseville to Haretown.

If both set out at the same time, how many miles will the hare have to travel before meeting the tortoise enroute?

The hare and the tortoise are together covering the distance at 12 miles per hour (i.e., on adding their speeds).
So, they will cover the distance of 60 miles in 5 hours.
Thus, in 5 hours, they will meet and the hare will have traveled 45 miles.

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 2 ANSWERS

Core Numeracy Problem

How many 9’s are there between 1 and 100?

Extension Numeracy Problem

How can you add eight 8's to get the number 1,000?

(Hint: You can only use normal operations)

BISHOP STOPFORD'S SCHOOL
NUMERACY

WEEK 3

Core Numeracy Problem

How many 9's are there between 1 and 100?

There are twenty 9's between 1 and 100

9, 19, 29, 39, 49, 59, 69, 79, 89, 90, 91, 92, 93, 94, 95, 95, 97, 98, 99

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 3 ANSWERS

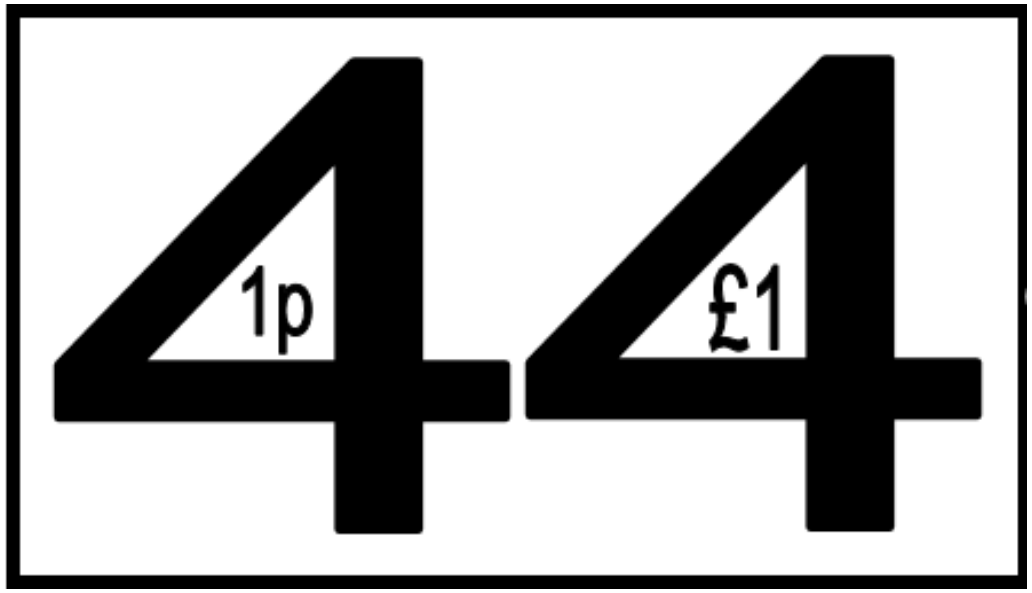
Extension Numeracy Problem

How can you add eight 8's to get the number 1,000?

(Hint: You can only use normal operations)

888 + 88 + 8 + 8 + 8 = 1000

Core Numeracy Problem



This is a Dingbat, say what you think this picture says. It is a famous saying

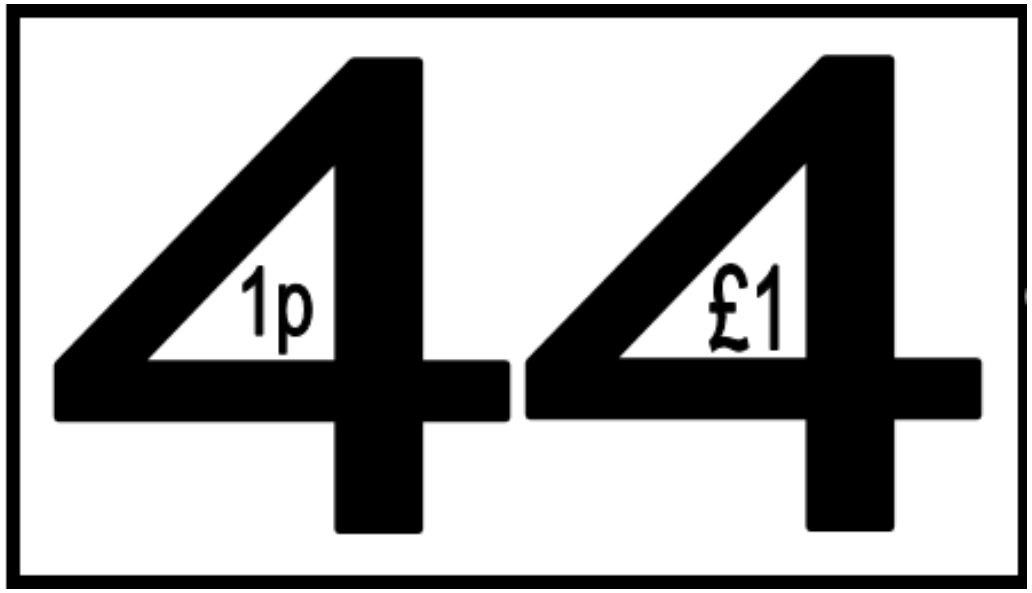
Extension Numeracy Problem

On average there are 15 words in a sentence. There are normally 4 sentences that make up a paragraph. You normally have 5 paragraphs per page of a book. How many words are there in a book with 80 pages

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 4

Core Numeracy Problem



In for a penny, in for a pound

Extension Numeracy Problem

On average there are 15 words in a sentence. There are normally 4 sentences that make up a paragraph. You normally have 5 paragraphs per page of a book. How many words are there in a book

with 80 pages

15 x 4 = 60 words per paragraph

60 x 5 = 300 words per page

300 x 80 = 24,000 words in the book

BISHOP STOPFORD'S SCHOOL NUMERACY

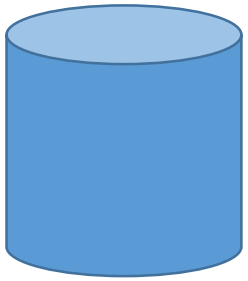
WEEK 4 ANSWERS

Core Numeracy Problem

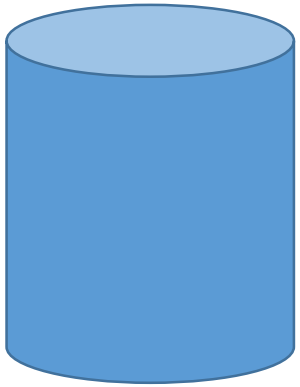
I am 48 years, 48 weeks, 48 days and 48 hours old. How old am I?

Extension Numeracy Problem

You have an endless supply of water. You have a container of 3 litres and 5 litres, you have to make exactly 4 litres. How do you do it?



3 litres



5 litres

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 5

Core Numeracy Problem

I am 48 years, 48 months, 48 weeks, 48 days and 48 hours old. How old am I?

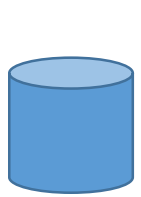
53 years, 1 week and day

BISHOP STOPFORD'S SCHOOL NUMERACY

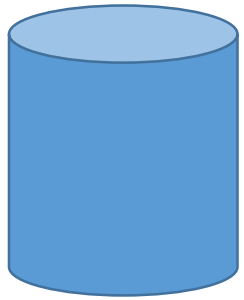
WEEK 5 ANSWERS

Extension Numeracy Problem

You have an endless supply of water. You have a container of 3 litres and 5 litres, you have to make exactly 4 litres. How do you do it?



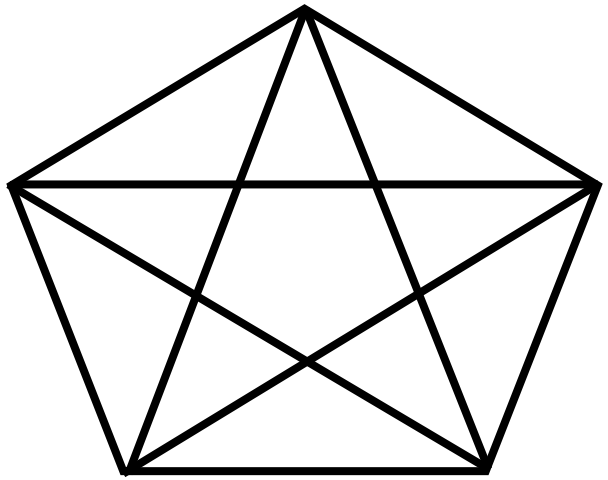
3 litres



5 litres

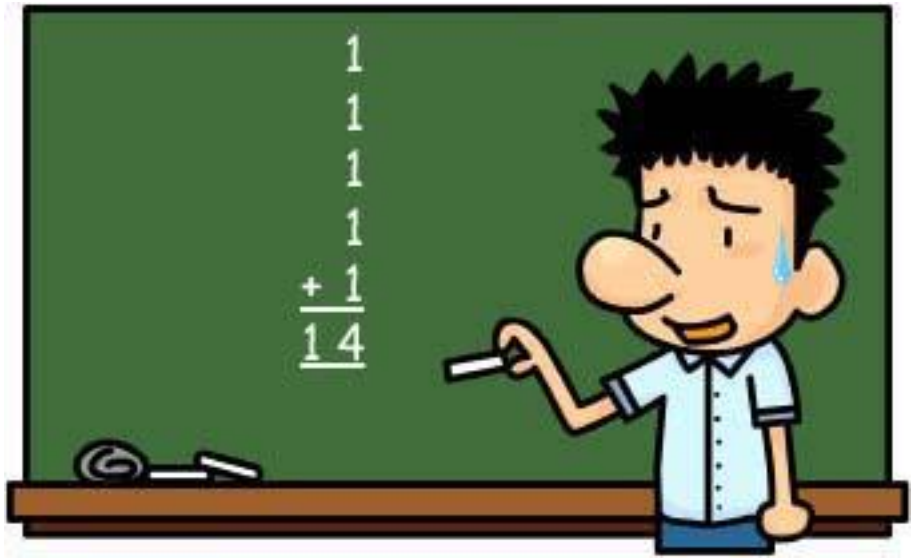
- Fill the 5 litre can from the tap
- Empty the 5 litre can into the 3 litre can - leaving 2 litres in the 5 litre can.
- Pour away the contents of the 3 litre can.
- Fill the 3 litre can with the 2 litres from the 5 litre can - leaving 2 litres in the 3 litre can.
- Fill the 5 litre can from the tap.
- Fill the remaining 1 litre space in the 3 litre can from the 5 litre can.
- Leaving **4 litres** in the 5 litre can.

Core Numeracy Problem



How many triangles are there in this shape?

Extension Numeracy Problem

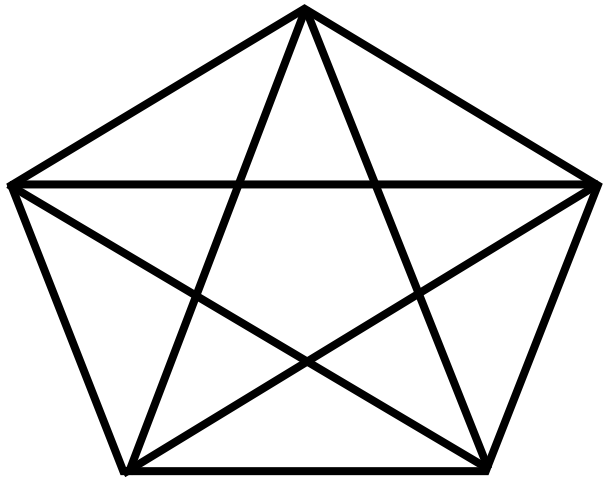


Add five 1’s so that their sum is 14.

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 6

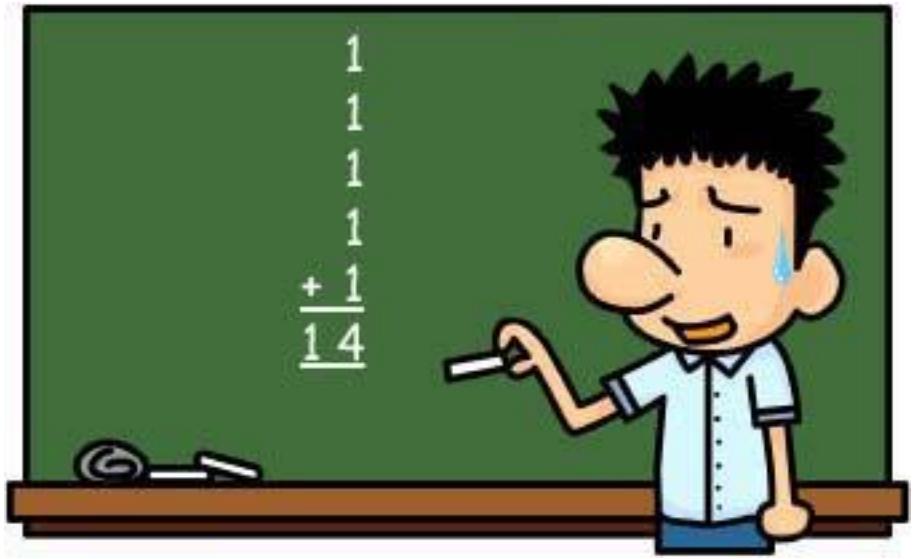
Core Numeracy Problem



How many triangles are there in this shape?

35 triangles

Extension Numeracy Problem



Add five 1's so that their sum is 14.

11 + 1 + 1 + 1 = 14

WEEK 6 ANSWERS

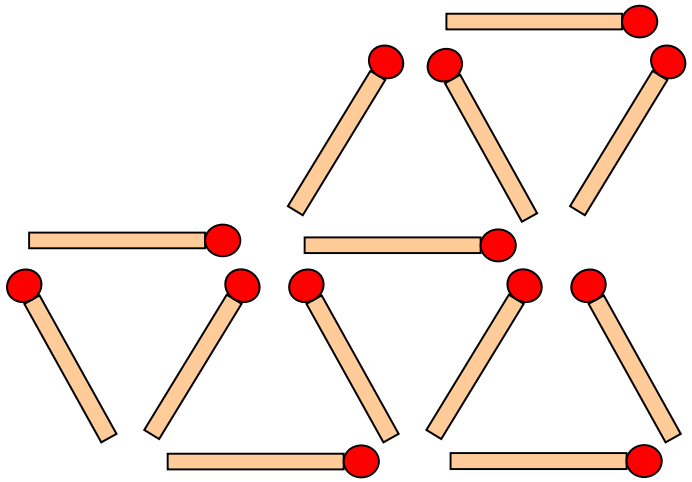
BISHOP STOPFORD'S SCHOOL NUMERACY

Core Numeracy Problem

At a country fair Marvin bought a prize pumpkin that weighed 10 kilograms plus half of 10 kilograms and half of its own weight.

What did the pumpkin weigh?

Extension Numeracy Problem



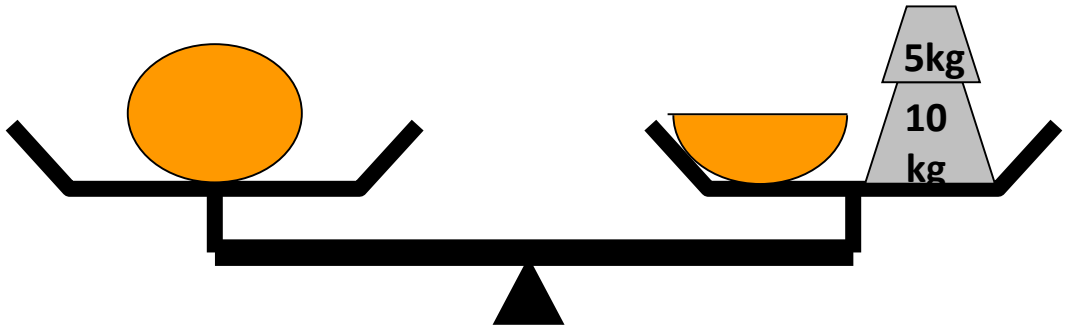
In this arrangement there are thirteen matches forming six identical equilateral triangles.

Which three matches must be removed to leave just three equilateral triangles ?

BISHOP STOPFORD'S SCHOOL NUMERACY

WEEK 7

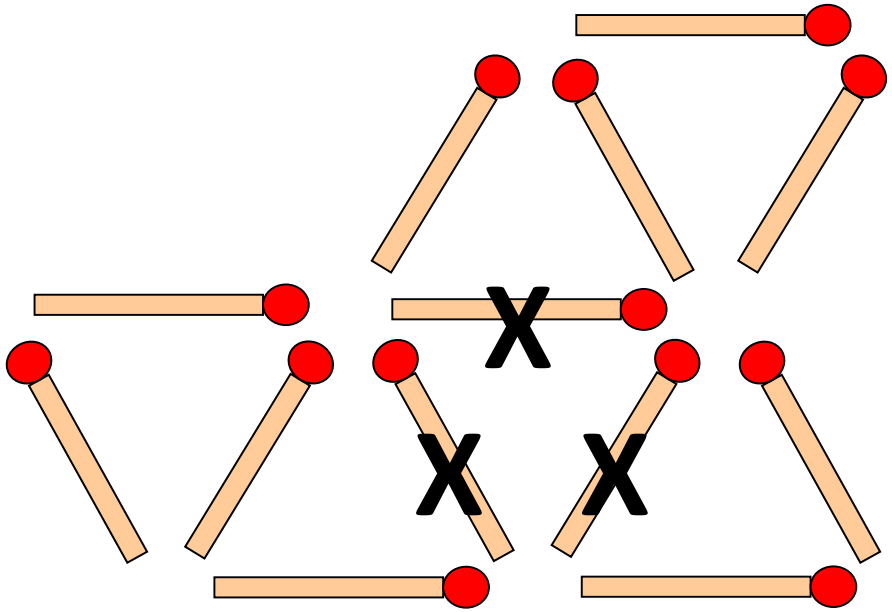
Core Numeracy Problem



The other half of the pumpkin is balanced by the
10 + 5 = 15 kg

The whole pumpkin weighs 30 kg

Extension Numeracy Problem



The question did not say they were identical equilateral triangles.

BISHOP STOPFORD'S SCHOOL NUMERACY

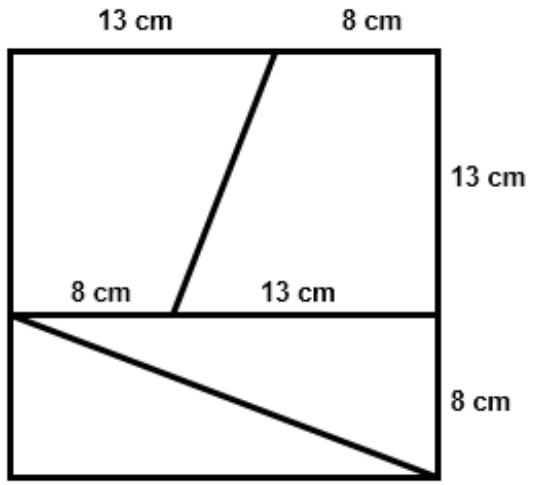
WEEK 7 ANSWERS

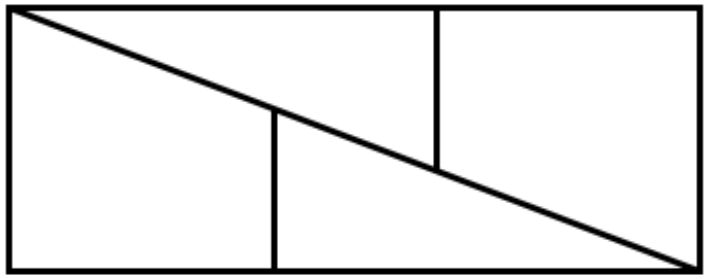
Core Numeracy Problem

This square of side 21 cm is cut as shown and re-arranged to form the rectangle below.

Calculate the area of both the square and the rectangle.

Explain your results !!





Extension Numeracy Problem

A traveller had a number of oranges and was allowed to pass four border checks on condition that he handed over half his oranges plus half an orange at each check point.

After crossing the fourth border point he had no oranges left.

How many oranges did he start with ?

WEEK 8

BISHOP STOPFORD'S SCHOOL NUMERACY