Numeracy Professional Skills Practice Test 1

This is a practice test adapted from Department for Education practice tests which can be found on sta.education.gov.uk/.

It has been designed to allow trainee teacher applicants to prepare for the Numeracy Professional Skills test which needs to be passed prior to the start of the course. This resource aims to familiarise applicants with question types and test format and provides practise in answering typical questions.

This test comprises of two sections:

- *mental arithmetic* (12 questions)

    - allow 55 seconds to read and answer each question in this section

    - try not to go back to the questions as this will not be allowed in a real test

    - carefully read any instructions about the format of the answer, e.g. 'correct to two decimal places'

    - calculators **cannot** be used in this section

- *written data and arithmetic* (16 questions)

    - allow 36 minutes to complete this section

    - carefully read any instructions about the format of the answer, e.g. 'correct to two decimal places'

    - answers to the questions may involve: writing answers in the space provided, ticking correct answers, circling correct answers/areas on a table or graph

    - simple (four-function) calculators can be used in this section

Mental Arithmetic

Question 1

In a class of 28 pupils, seven attend the maths club after school.

What percentage of the class do not attend the maths club after school?

Answer: _____ **%**

Question 2

A teacher took a group of visiting French pupils to a theme park.

The total entrance cost for the group was 260 euros.

Taking 1.3 euros as equal to one pound, what was the total entrance cost in pounds?

Answer: **£** _____

Question 3

There are 25 pupils in a class who take part in a drinking milk initiative. Pupils have a 210 millilitre glass each. During the break each pupil drinks a full glass of milk. Milk comes in 1000 millilitre bottles.

How many bottles of milk are needed?

Answer: _____ **bottles**

Question 4

What is three point zero two five multiplied by two hundred?

Answer: _____

Question 5

A school day starts at 8: 50 with a ten minute registration period. Before lunch, there are three lessons which are each fifty-five minutes and one fifteen minute break. Lunch is one hour.

What time does lunch finish?

Give your answer using the 24-hour clock.

Answer: ☐ : ☐ **hours**

Question 6

On the last day of school, pupils were allowed to bring some snacks to share with each other. 5 pupils brought 3 apples each, 6 pupils brought 2 bananas each, and 3 pupils brought 4 nectarines each.

How many pieces of fruit were there to share?

Answer: _____

Question 7

In a maths challenge for charity, pupils were solving arithmetic problems. In one hour, all the pupils correctly answered 3700 questions. The university that was sponsoring the challenge said that they would pay $70p$ for each correctly answered question.

How much money did the charity receive in pounds?

Answer: £ _____

Question 8

There are 80 pupils in Year 5 in a local primary school. Thirty-two of these pupils have at least one sibling in the same school.

What proportion of the year group has at least one sibling in the school?

Give your answer as a decimal to one decimal place.

Answer: _____

Question 9

Pupils travelled to the Football Competition Final and returned to the school by coach. A one way journey was 160 kilometres long.

Let 1 kilometre be equal to $\frac{5}{8}$ of a mile.

How many miles did the coach travel that day with the pupils?

Answer: _____ **miles**

Question 10

In a class of thirty pupils, seventy per cent of the pupils have a 100% attendance.

How many pupils have 100% attendance?

Answer: _____ **pupils**

Question 11

A pupil in a Year 7 class has a reading age of 12 years and 2 months. Exactly a year ago his reading age was lower by 17 months.

What was the pupil's reading age in years and months a year ago?

Answer: _____ **years and** _____ **months**

Question 12

There are twenty-eight pupils in a class. Four-sevenths of the class are girls. A quarter of the girls have blue eyes.

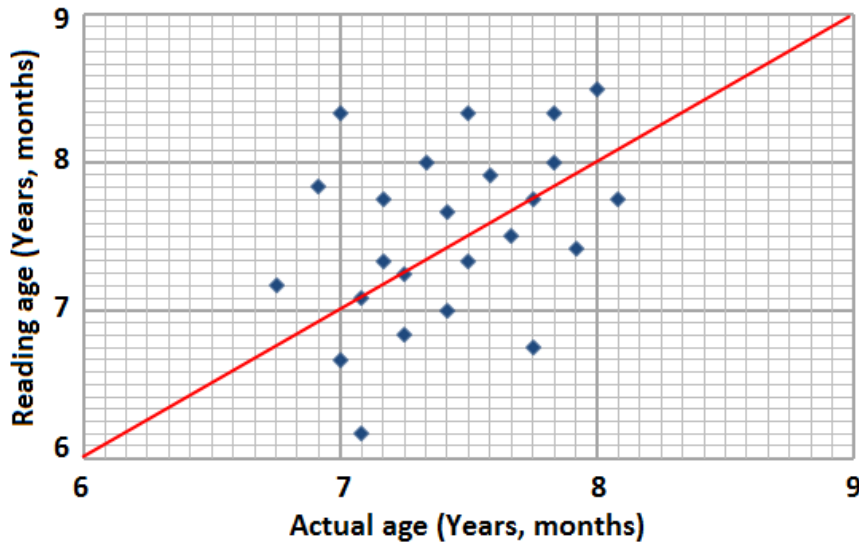What fraction of the class are girls with blue eyes?

Give your answer in its lowest terms.

Answer: ┌─┐
         │ │
         ├─┤
         │ │
         └─┘

Written Data and Arithmetic

Question 13

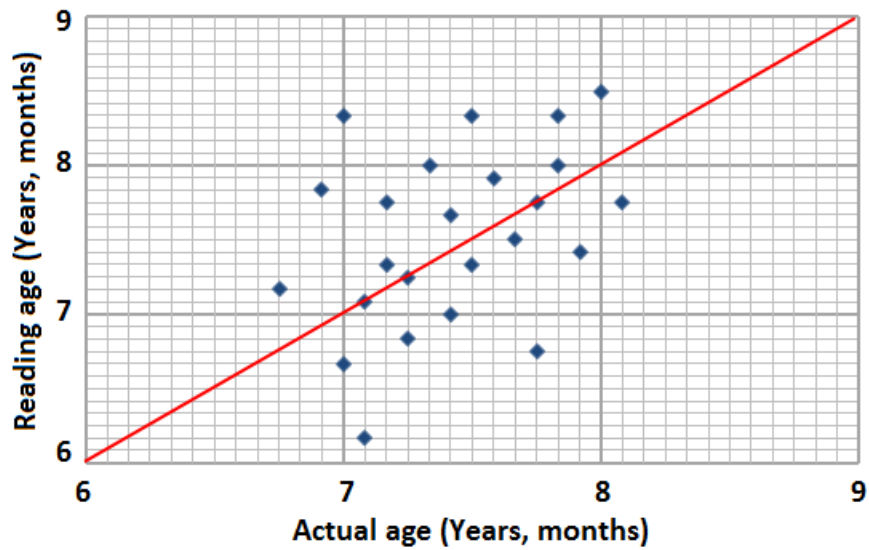The scatter graph below shows the actual age and reading age of 24 pupils.

How many pupils have a reading age higher than 7 years and 7 months?

Answer: _____ **pupils**

Question 14

The scatter graph below shows the actual age and reading age of 24 pupils.

Circle the pupil who has the reading age higher than the actual age by exactly 10 months.

Question 15

A class of 27 pupils is going to the museum with 5 adults (teachers/parents).

The table shows admission prices to the museum.

	Price
Child (single)	£3.50
Adult (single)	£8.00
Group (10 children + 2 adults)	£45.00

What is the smallest amount they have to pay as the admission fee to the museum?

Answer: £ _____

Question 16

Children are at school from 9: 00 to 15: 15.

They have two breaks: the first one is 20 minutes and the second one, the lunch break, is 40 minutes.

What is the percentage of a school day allocated to breaks?

Answer: _____ **%**

Question 17

In Year 3, pupils take different measurements at school. As part of their homework, they were asked to measure their journey time to school to the nearest minute. The teacher used a cumulative frequency graph to present this data which later was looked at by Year 6 pupils when they were learning about different ways of displaying data.
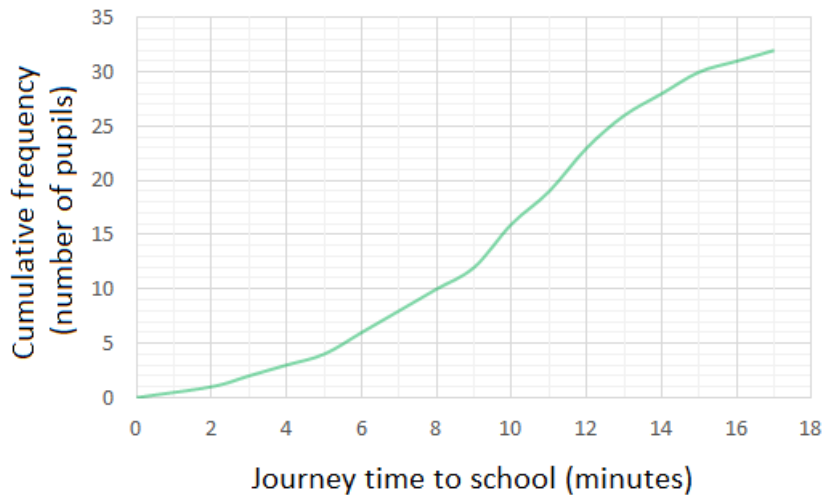
Tick all the true statements:

☐ The median time spent on a journey to school was 9 minutes.

☐ 25% of pupils take 7 minutes or less to get to school.

☐ One pupil takes 17 minutes to get to school.

Question 18

Pupils from the cycling club cycled along the south coast. The table below shows the time they cycled each day and the average speed.

Day	Time	Average Speed (in kilometres per hour)
Monday	5 hours	16
Tuesday	6 hours	14
Wednesday	4.5 hours	18

On what day did they cycle the longest distance?

☐ Monday

☐ Tuesday

☐ Wednesday

Question 19

32 pupils took part in a swimming competition. A PE teacher recorded the number of lengths of the swimming pool swum by his pupils. The results are presented in the table below.

Some information in the table is missing which you need to complete.

Number of pupils	Lengths swum	Total lengths swum
8	10	80
	12	96
10	15	
6	18	

$$\text{Mean number of lengths} = \frac{\text{total number of lengths}}{\text{total number of pupils}}$$

What was the mean number of lengths for this group of 32 pupils?

Give your answer to the nearest whole number.

Answer: _____ **lengths**

Question 20

In March, pupils took their last mock GCSE exams. At the beginning of the next school year a teacher prepared a chart comparing the average results for the mock and final GCSE exams across five subjects for all the pupils who left school a few months previously.
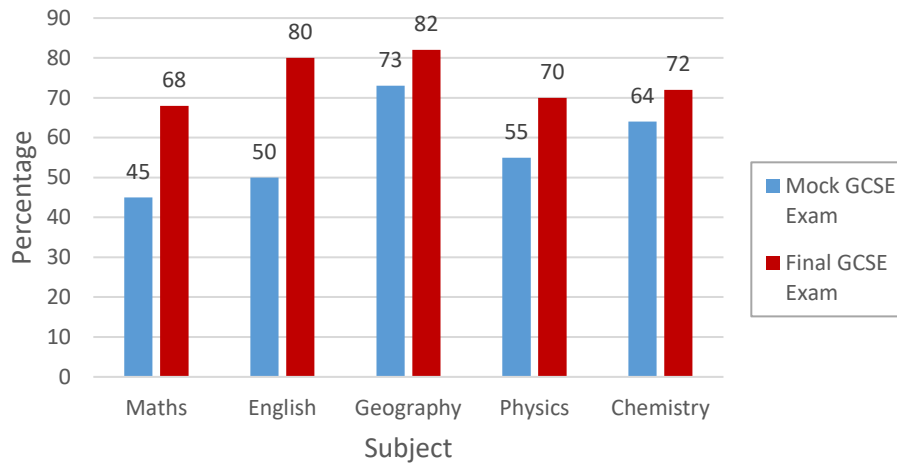
Tick all the true statements:

☐ The average result for the Chemistry mock exam was the best predictor of the final GCSE exam result for that subject.

☐ The final English GCSE exam score was 60% better than the mock for that subject.

☐ The average score for all five subjects in the mock GCSE exams was greater than 55%.

Question 21

The results for Maths and English tests are presented in the table for ten pupils.

Circle the letters in the table for the pupils who scored at least 10 percentage points less in English than in Maths.

	Pupils' marks out of 50	
Pupil	**Maths**	**English**
A	32	22
B	43	48
C	31	27
D	27	29
E	23	17
F	35	33
G	15	11
H	13	13
I	37	25
J	9	4

Question 22

The results for Maths and English tests are presented in the table for ten pupils.

Pupil	Pupils' marks out of 50	
	Maths	English
A	32	22
B	43	48
C	31	27
D	27	29
E	23	17
F	35	33
G	15	11
H	13	13
I	37	25
J	9	4

What fraction of pupils did better in English than they did in Maths?

Give your answer in its lowest terms.

Answer:

Question 23

At the final school rugby match, the ratio of children to adults is 3 ： 2.

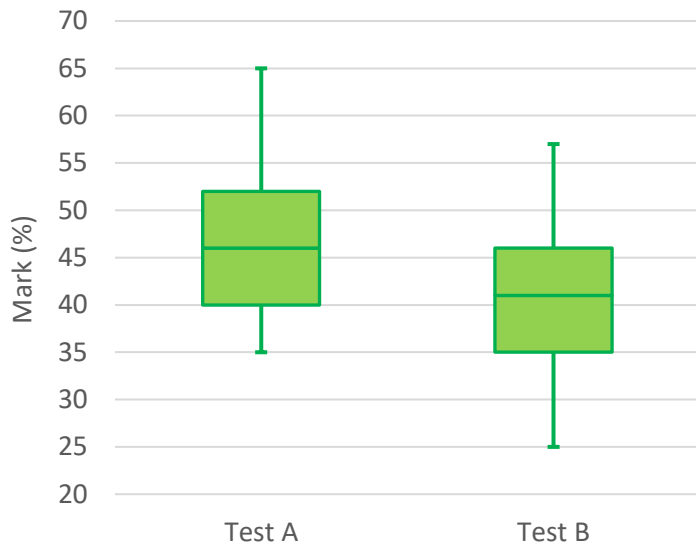There are 120 children in the crowd.

Each adult ticket costs £9.

Each child ticket costs a third of the adult ticket.

How much money was collected from the ticket sale?

Answer: **£** _____

Question 24

A biology teacher presented the results from two tests using a box-and-whisker diagram.

Tick all the true statements:

☐ The median mark in Test B was approximately 5 percentage points lower than the median mark in Test A.

☐ The range of percentage marks was greater in Test A.

☐ 75% of pupils achieved 52% or more in Test A.

Question 25

Six pupils from year 6 were training for a 400 metre run for a competition between the primary schools in a borough.

Circle the pupil(s) that show a <u>continual</u> trend of improvement over the five training sessions.

Pupil	Time achieved in each training session in seconds				
	Training 1	Training 2	Training 3	Training 4	Training 5
A	66.3	65.9	65.7	67.0	66.5
B	68.2	68.0	68.1	69.0	68.1
C	65.3	65.1	64.9	64.7	64.5
D	67.8	67.1	68.6	68.2	66.9
E	65.5	65.7	66.0	66.2	66.3
F	66.8	66.5	66.4	66.1	65.8

Question 26

There are sixteen pupils in a group. 15 pupils collected, on average, £12.40 each. The last pupil collected £13.68.

Calculate the new mean amount of money collected by one pupil.

Answer: £ _____

Question 27

The table shows the information about the marks achieved by pupils in GCSEs for three subjects.

	Mark (Percentages)		
	Range	**Median**	**Mode**
Mathematics	40	46	53
English	63	41	25
Science	91	37	46

Tick all the true statements:

☐ All pupils achieved at least 13% in Mathematics.

☐ Some pupils achieved at least 90% in English.

☐ At least one pupil achieved less than 10% in Science.

Question 28

Three pupils were drawing triangles. The table shows the dimensions of these triangles.

Pupil	Base (in cm)	Height (in cm)
A	10	15.5
B	3.5	7
C	8	5.5

The area of a triangle is given by $\frac{1}{2} \times$ base $\times$ height.

What is the total area of three triangles?

Give your answer correct to two decimal places.

Answer: _____ cm^2

END OF TEST

This resource was produced by the **sigma** Network Employability Special Interest Group whose members are:

- Dr Kinga Zaczek, Royal Holloway, University of London
- Frances Whalley, University of Hertfordshire
- David Faulkner, University of Hertfordshire
- Laura Hooke, Loughborough University London