BROAD HORIZON
— TUITION CENTRE —

Mock Exam 44

ANSWERS

Year 5

GL Practice Papers

Broad Horizon Tuition

Please don't hesitate to contact us at
info@BHT11plus.co.uk if you have any questions or queries.

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BROAD HORIZON
TUITION CENTRE

11+ Birmingham and Warwickshire

Practice Test 9

Paper A

Answers

BROAD HORIZON
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Teacher's Guide

Mock Exams

1) Timing

Each section is individually timed. Timings are written on the teachers answer sheet (at the end of this guide).

Practice questions are completed outside of the time limit.

Students must get used to working out their **start and end times** and jotting them down on their exam paper, for every single section. Teachers must not tell students the start and end times, they need to work it out for themselves.

E.g.
Start 11:07
End 11:22

Might be a good idea to stop their time 30 seconds into the section and check who did and did not work out their start and end times (the vast majority won't have, or they will only do it for the first section and forget about it for the rest of the mock). This calculation must **only** be done once their time has started, because they're not allowed to write anything outside of the time limit.

Students **cannot** manage their time if they don't even know what time they're going to finish, and they cannot know what time they're going to finish if they don't know what time they started.

Every few minutes students should be **looking at the clock** so they know whether they're working too fast or too slow.

Also, for the really short sections, like NVR 3 minutes we don't advise they spend time writing down start and end times, since the time is so short, they can't afford to waste it, they should just look at the clock and know what time they're going to finish.

In the 11 plus exam, they won't have a digital timer on the board, they need to **get used to keeping an eye on the clock**.

The teacher should have their own digital timer which only they can see, maybe on their phone, or even on the tablet. Please turn off the TV screens so students can not use the digital time as they won't have this in their real exams.

Time limits are not so strict at this stage. It's their first mock exam. If they need a few extra minutes to finish, we can give them that. Timings will become stricter as the months go on with absolute strict timings around July/August.

You should **go straight into the mock exam** at the start of the lesson, do not start with marking homework, you'll run out of time on the mock.

Keep in mind it will take about 25/30 minutes to read out the answers and collect in the scores.

The mock exam itself will take about 90 minutes plus 30 minutes marking and collecting scores plus break in between, plus the extra time, this will easily take up the majority of the lesson.

Time management is a huge component of what students need to get used to with these mock exams.

Students are to be given a **time warning** when there is 1 minute remaining – this is the only time warning they are given.

2) Scores

Scores must be logged on the excel sheet.

The level of these mocks is very similar to the real 11 plus exam, and the students are about 10 months away from the 11 plus, so they're not expected to get really high scores right from the start. On the first mock exam, they're not expected to get higher than about 50%. If they get approx. 50% on the first mock they've done quite well. Anything below 40% would be a concern.

The next mock exam is at the end of January, with 1 at the end of February and another one at the end of March (after which they will have a mock exam almost every week). Their scores should typically go up by about 5-10% each month, eventually achieving about 75-85% around July/August.

Students must write down their score breakdown on their exam paper, as shown below:

Attempt 1

English

VR

Maths

NVR

TOTAL =	**/ 142**	**%**

3) Marking and Cheating

The pressure of achieving good scores **will** cause students to cheat whilst marking their work even if they seem like the type not to cheat. We've learnt over the years there isn't a type who cheat, when the pressure is on – they are all capable of it. Every year we see some of the most intelligent students, very capable, yet perform poorly on the exams because they cannot handle the pressure. Unfortunately, the pressure comes hand in hand with exams like the 11 plus and this is something we need students to get over as quickly as possible.

Anyone who gets over 45% their papers will be collected in and one of the admin team will re-mark their exam paper to double check them.

Please warn students about marking their work correctly before you start marking.

We need to get cheating out of their system very early on. We cannot help the students if we think they are doing really well, when the reality is otherwise.

All mock exams are self-marked in a different coloured pen (no peer marking, that has its own issues), so nobody should be seen holding a pencil whilst marking. They will often leave the boxes blank during the exam and then fill them in whilst you read out the answers and then tick them. Another common one is for them to write in multiple answers for 1 question and then tick them. Quite often they might only cheat on a few questions per section thinking it won't arouse suspicion, but those marks add up.

It might be a good idea to **collect in all the answering sheets** once you're done marking, and just have a quick flick through the pages.

4) Lesson Format

It is likely the entire lesson will be spent on the mock exam.

Students must complete the entire mock exam before we mark. We don't mark after each section like in a normal lesson; students need to **get used to the intensity** of sitting two-1-hour papers. They can have their break around their usual break time, however, please ensure it's at the end of a section and we're not stopping in the middle of a section to have a break.

They'll be given a 2nd blank answering sheet, which they take home and re-attempt the entire paper again from scratch – this is the homework on a mock exam week.

At the start of the following lesson, you'll mark their 2nd attempt, log their 2nd attempt scores on excel, and then go through the entire mock exam **question by question and explain anything they've got wrong**. (If there happens to be time left, you'll start the next lesson pack.)

5) Parent-Teacher Meetings

Meetings with parents will follow the first few mock exams, so we can **address any issues early on**.

We need to put plans in place for students who are struggling in specific areas, we can print extra content for them to cover at home, extra work for them to do during their holidays etc. Please let the manager know what work is needed and for which students so we can get this printed for them and **put a plan of action in place**.

Any plans put in place, please log them on **Trello** so the whole team is onboard and aware.

6) Students Answering Sheets

There is to be **no** working out on the answering sheet itself, answering sheets need to be clean. Working out on the exam paper only.

Students must rub out wrong answers and not cross them out.

Students must tick the answering sheet as they go along and not transfer their answers at the end, if they get used to transferring answers at the end and they run out of time, they could end up losing marks for entire sections.

Again, it might be a good idea to collect in all the answering sheets once you're done marking, and just have a quick flick through the pages.

7) Equipment

There is to be **no** use of **any** other equipment such as highlighters, pens, rulers, protractors etc.

Pencils and erasers only.

BROAD HORIZON
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Paper 1

English Comp 1 – 12 Minutes

Verbal Reasoning 1 - 8 Minutes

Maths 1 - 15 Minutes

Non -Verbal 1:

Subsection 1 – 3 Minutes

Subsection 2 – 3 Minutes

Spatial Subsection 1 – 3 Minutes

Paper 2

English Comp 1 – 12 Minutes

Verbal Reasoning 1 - 9 Minutes

Maths 1 - 15 Minutes

Non -Verbal 1:

Subsection 1 – 3 Minutes

Subsection 2 – 3 Minutes

Spatial Subsection 1 – 3 Minutes

English

Practice Section

1 **E**

2 **A**

Test

1 **A**

It is a homophone because 'plain' and 'plane' have the same pronunciation but different meanings. It is not an adjective or pronoun (it is a noun that means an *area of flat land*). It is not a palindrome. A palindrome is a word or phrase that reads the same backwards as forwards (e.g. *madam*). It is not an acronym. An acronym is an abbreviation formed from the initial letters of other words and pronounced as a word (e.g. NASA).

2 **B**

We know it is a river because it joins the sea: 'the broadening Floss hurries on … to the sea' (lines 1–2).

3 **C**

Pathetic fallacy when human emotions are attributed to something non-human. The tide (the rising and falling of the sea) cannot really be loving – being loving is a human emotion.

4 **E**

The word 'transient' means *brief*, *short-lived*, etc.

5 **B**

It was 'departing February' (line 23). This means it was *leaving* February (i.e. about to become March, because it has not actually departed February yet). February 28th is the last day of February. The answer cannot be E because February only has 28 or 29 days.

6 **C**

We have 'fir' in line 4, 'ash' in line 5 and 'willows' in line 9.

7 **D**

Exclamation marks are used to express a strong emotion. The sentence is about the narrator finding 'the little river' lovely, so the exclamation mark emphasises how lovely they find it (how much they love it).

8 **C**

The suffix 'let' means *small* (a *booklet* is a small book, a *piglet* is a small pig, etc.). So, 'wavelets' are small waves or *ripples*.

9 **D**

There is no mention of containers full of a thick liquid substance: 'rounded sacks of oil-bearing seed' (line 4) are sacks full of *seeds* that bear oil. Land suitable for grazing animals is 'pastures' (line 9). Areas where ships can be tied and goods loaded and unloaded are 'wharves' (line 6). A combustible rock used as a fuel is 'coal' (line 5). A large area of flat land with few trees is a 'plain' (line 1).

10 **A**

If clouds are *threatening*, it means they are threatening to rain. Rain clouds are dark.

11 **E**

We are told 'it is **far on** in the afternoon' (line 22). This means it is late afternoon. 5.00 p.m. is late afternoon.

12 **C**

The words 'is', 'lies' and 'drowns' are verbs. An easy way to identify verbs in a sentence is to change the tense of the sentence and see which words change. The sentence is in the present tense. If we change it to the past tense, 'is' becomes *was*; 'lies' becomes *lay*; and 'drowns' becomes *drowned*.

13 **D**

The word 'stylish' means *fashionable (*characteristic of a *current* style). Dorlcote Mill is not likely to be stylish because it is 'as old as the elms and chestnuts' (line 25). It is *neat*: 'trimly-kept' (line 24). It is *prepossessing*: 'pleasant to look at' (line 23). It is *aged*: 'as old as the elms and chestnuts' (line 25). It is *homely*: 'comfortable' (line 24).

14 **B**

A 'blast' is a strong gust of wind or air. Northerly winds tend to bring relatively cold air from polar regions.

15 E

We do not have foreshadowing (a warning or indication of a future event)**.** We have repetition: 'Look **at** their grand shaggy feet that seem to grasp the firm earth, **at the** patient strength of their necks, bowed under the heavy collar, **at the**…' (lines 43–44). We have a simile: 'They are **like** a great curtain of sound' (lines 34–35). We have alliteration: e.g. '**m**ighty **m**uscles' (line 45). We have onomatopoeia: e.g. 'crack' (line 40).

Verbal Reasoning

Practice Section

1 **nine** (A nonagon has nine sides.)

2 **cat** (A feline is a cat.)

3 **PJPF** (+2, +1, +2, + 1)

4 **EQQM** (-1, +2, -1, +2)

Test

1 **train**

Each word in the top row is a singular noun.

Each word in the bottom row is made up of a large number of the noun directly above, e.g. a large number of *carriages* form a *train*.

2 **alpaca**

Each word in the top row is an animal.

Each word on the bottom row is a product that comes from the animal directly above, e.g. *wool* can come from an *alpaca*.

3 **five**

Each word in the top row is a type of number.

Each word in the bottom row is an example of the type of number directly above, e.g. *five* is a *prime* number.

4 **rank**

Each word in the bottom row is a vehicle that carries passengers.

Each word in the top row is the place where the vehicle directly below typically stops to let passengers on or off, e.g. a *taxi* picks up passengers at a taxi *rank*.

5 oyster

Each word on the top row is a natural resource / commodity.

Each word on the bottom row is what produces the resource directly above, e.g. a *pearl* is produced by an *oyster*.

6 roam

Each word on the top row contains a vowel digraph (two letters that represent a single sound).

Each word on the bottom row rhymes with the word directly above, but the same vowel sound is produced by a different combination of letters, e.g. *roam* rhymes with *gnome*.

7 mobile

Each word on the bottom row is an antonym (opposite) of the word directly above, e.g. *mobile* is the opposite of *stationary*.

8 Professor

Each word on the top row is an example of the word directly below, e.g. *Professor* is an example of a *title*.

9 QZHM

The code is produced by moving back 1 letter (-1) of the alphabet from each letter of the word.

10 DJDX

The code is produced by moving forward +1, +2, +3, +4 letters of the alphabet.

11 WHERE

The code is produced by moving +2, -2, +2, -2, +2 letters of the alphabet.

So, to find the word from the code, you must reverse this and move -2, +2, -2, +2, -2 letters.

12 REGIT

The code is produced by reversing the letters of the word.

13 SZOOL

Imagine a mirror line in the middle of the alphabet between M and N.

The code is produced by swapping each letter for the letter in its mirror position on the other side of the alphabet.

14 FACT

The code is produced by moving -4, +2, -4, +2 letters of the alphabet.

So, to find the word from the code, you must reverse this and move +4, -2, +4, -2 letters.

15 HMOA

The code is produced my moving +1, -2, +3, -4 letters of the alphabet.

16 PASTY

The code is produced by moving -5, -4, -3, -2, -1 letters of the alphabet.

So, to find the word from the code, you must reverse this and move +5, +4, +3, +2, +1 letters.

Mathematics

Practice Section

1 **C**

2 **A**

Test

1 **D**

There are five lots of 30 minutes between 10:00 and 12:30.

So, the temperature rises by 5 × 2°C = 10°C

-9 + 10 = 1°C

[Measurement]

2 **B**

The shape is a quadrilateral, so the sum of its internal angles is 360°.

30° + 25° + 20° = 75°

If you subtract this from 360°, you will get the remaining internal angle.

However, to work out m, you would then need to subtract your result from 360° again, which would cancel out the previous working.

So, m = 75°

[Angles and Degrees]

3 **D**

$$\frac{12}{8} = \frac{3}{2}$$

$$12 \times \frac{3}{2} = 18 \text{ m}$$

[Ratio and Proportion]

4 **C**

$\frac{14.95}{1.15} = \frac{1495}{115}$

You can simplify by first dividing by 5: $\frac{299}{23}$

299 ÷ 23 = £13

Hint: Write down the multiples of 23 if you find it easier!

[Money]

5 **B**

Count the number of large rectangles in each bar:

2 + 0.5 + 5 + 4 + 3 = 14.5

87 student ÷ 14.5 = 6 students

So, each large rectangle (or dark grid line) on the chart represents 6 students.

This means the half-rectangle representing Hyde Park is 3 students.

[Statistics]

6 **A**

Substitute the given numbers into the equation:

$95 = (2 \times 7 + 5) \times q$

$95 = (14 + 5) \times q$

$95 = 19q$

$q = 95 \div 19 = 5$

[Algebra]

7 **C**

Add the fractions by finding a common denominator (35):

$$\frac{5}{35} + \frac{14}{35} = \frac{19}{35}$$

Subtract from the whole cake:

$$\frac{35}{35} - \frac{19}{35} = \frac{16}{35}$$

This fraction cannot be simplified further.

[Fractions, Decimals and Percentages]

8 **A**

1 hour 12 minutes + 34 minutes = 1 hour 46 minutes

Take 1 hour off 09:00 first → 08:00

Then take 46 mins off → 07:14

[Measurement]

9 **B**

22.5 + 25 = 47.5

285 ÷ 47.5 = 6

6 × 22.5 = 135 g

[Ratio and Proportion]

10 **B**

A cuboid has 8 vertices.

A triangular prism has 3 rectangular faces (in addition to two triangular faces).

8 – 3 = 5

[Properties of Shapes]

11 C

Side length of large square = 12.5 + 2.5 = 15 cm

Area of large square = 15 × 15 = 225 cm^2

Side length of shaded square = 12.5 – 2.5 = 10 cm

Area of shaded square = 10 × 10 = 100 cm^2

$\frac{100}{225} = \frac{4}{9}$

[Perimeter, Area and Volume; Fractions, Decimals and Percentages]

12 B

22p × 12 + 6p = 264p + 6p = 270p

270p ÷ 90p = 3

[Money]

13 D

Flip the word horizontally:

INVERTED

And then vertically:

INVERTED

Reflecting a word or shape once in each axis gives the same results as rotating by 180°.

[Reflection, Rotation and Symmetry]

14 D

The sum of the four friends' heights is 110 cm × 4 = 440 cm.

The sum of the five friends' heights is 115 cm × 5 = 575 cm.

The difference in these sums is Reece's height:

575 – 440 = 135 cm

[Statistics]

15 C

102 is an even multiple of 3 – it ends in a two (so it is even) and its digits add to a multiple of 3.

99 is a palindromic number as its reads the same backwards as forwards.

No numbers on the list are cubes.

101 and 103 are both three-digit prime numbers.

99 is a multiple of 3 and 11.

[Special Numbers; Factors and Multiples]

Non-Verbal Reasoning

Subsection 1

Practice Section

1 **A** (The figure rotates 90° clockwise each time.)

2 **C** (There is one more side on the shape each time. The circle moves to the next corner clockwise, alternating between black and white.)

Test

1 **A**

The series alternates between two figures.

2 **E**

From left to right, the hexagon increases in size from the top left of the box. Its shading follows a repeating pattern: crossed, grey, striped, and repeat.

3 **E**

From left to right, a new triangle is added at the bottom each time, pushing the others round in a clockwise direction, to form a pentagon.

4 **C**

From left to right, the figure rotates 90° anticlockwise each time, and another fifth is shaded black working in an anticlockwise direction.

5 **C**

From left to right, one more grey square is added each time, from the top left to the bottom right; one circle is taken away from the bottom left to the top right; and the cross moves half a side clockwise around the box.

6 **C**

From left to right, the white triangle rotates 90° clockwise each time, and the rest of the figure rotates 90° anticlockwise.

7 **A**

From left to right, the wavy line moves from the left to the middle to the right and then back again; the diamond moves around the corners of an invisible rectangle in a clockwise direction; the vertical line with a V-shape moves from the left of the box to the right, flipping to the other side of the horizontal line each time.

8 **B**

From left to right, the horizontal dashed line moves down the box; the large white circle alternates between the centre of the box and the bottom left corner; and the black circle moves from the bottom right corner to the top left corner.

Non-Verbal Reasoning

Subsection 2

Practice Section

1 **D** (The other figures have one small shape inside and one outside.)

2 **A** (The other figures are divided into four parts.

Test

1 **B**

In the other figures, the large shape has a dotted outline and the small inner shape has a bold outline.

2 **E**

All the other figures have an open part (they do not have a complete outline).

3 **C**

In all the other figures, the small inner shape points in the opposite direction to the large outer shape.

4 **E**

In all the other figures, the middle shape is always a circle or square.

5 **A**

In all the other figures, the arrowhead points to the side of the square (not a corner).

6 **C**

In all the other figures, there are two vertical lines without circles on the end.

7 **B**

In all the other figures, the white circle is on the next point clockwise to the black circle.

8 **D**

In all the other figures, there is one more side on the large shape than short, bold lines overlapping its edge.

Spatial Reasoning

Practice Section

1 **D**

2 **A**

Test

1 **C**

The paper is folded two times and four holes are punched. The circle and square on the left are punched through four layers of paper, and the two circles on the right are punched through two layers. Therefore, there will be twelve holes when the paper is unfolded. Each fold acts like a mirror line – the holes are reflected across it.

2 **A**

The paper is folded three times and one hole is punched. The hole is punched through five layers of paper. Therefore, there will be five holes when the paper is unfolded. Each fold acts like a mirror line – the holes are reflected across it.

3 **D**

The paper is folded three times and two holes are punched. The circle is punched through four layers of paper, and the square is punched through four layers. Therefore, there will be eight holes when the paper is unfolded. Each fold acts like a mirror line – the holes are reflected across it.

4 **E**

The paper is folded three times and two holes are punched. The square is punched through two layers of paper, and the circle is punched through six layers. Therefore, there will be eight holes when the paper is unfolded. Each fold acts like a mirror line – the holes are reflected across it.

5 **E**

The paper is folded three times and two holes are punched. The bottom circle is punched through four layers of paper, and the top circle is punched through two layers. Therefore, there will be six holes when the paper is unfolded. Each fold acts like a mirror line – the holes are reflected across it.

6 **B**

The paper is folded three times and three holes are punched. The square is punched through two layers of paper, the triangle is punched through four layers and the circle is punched through two layers. Therefore, there will be eight holes when the paper is unfolded. Each fold acts like a mirror line – the holes are reflected across it.

7 **D**

The paper is folded three times and two holes are punched. The square is punched through four layers of paper, and the circle is punched through four layers. Therefore, there will be eight holes when the paper is unfolded. Each fold acts like a mirror line – the holes are reflected across it.

8 **A**

The paper is folded three times and three holes are punched. The square is punched through four layers of paper, the circle is punched through two layers and the triangle is punched through two layers. Therefore, there will be eight holes when the paper is unfolded. Each fold acts like a mirror line – the holes are reflected across it.

BROAD HORIZON
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Mock Exam 44

11+ Birmingham and Warwickshire

Practice Test 9

Paper B
Answer Sheets

- This paper is divided into smaller, individually-timed sections that test English Comprehension, Verbal Reasoning, Mathematics and Non-Verbal / Spatial Reasoning.
- Each section starts with some untimed practice questions.
- All answers should be marked on the separate answer sheet provided.

Please turn over the page to begin the English Practice section.

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English

Test

1 **C**

'My average working day bears **very little resemblance** to that of most people.' (line 1) This means that Lott's day is *very different* to the norm.

2 **E**

If you *don* clothes, you put them on.

3 **C**

4.30 p.m. is late afternoon, and we are told this is when he would be writing (working): 'I could only manage a few hours of writing a day, invariably [always] in the late afternoon' (lines 9–10).

4 **C**

The prefix *in-* tells us that there is *no* variation, i.e. this *always* happens.

5 **D**

There is nothing in the article that gives us any clue as to whether Lott is middle-aged or not. We know he has experienced writer's block (a period of time when a writer is unable to think of something to write): 'unable to get any words down on the paper' (lines 8–9). We know he has written both fiction (*White City Blue* is a novel) and non-fiction (the article the comprehension is on). We can deduce he lives in London because his office is 'in North Kensington' (line 14), which is in London. It would not make sense for his office to be far from home when a writer can write anywhere. We can deduce he enjoys his food because for lunch he has 'a proper meal, two or three courses' (line 18). If he did not enjoy his food, we would not expect him to bother so much with lunch.

6 **A**

'I know exactly how much juice I have in me and don't try to squeeze out more than is available' (lines 12–13). From the answer choices, it is a piece of fruit that contains juice you would want to squeeze out (e.g. you would squeeze the juice out from an orange).

7 **D**

Lott says his morning routine ('answering emails, doing accounts, reading newspapers and books' (lines 15–16)) 'is a form of limbering up' (line 17). *Limbering up* is stretching one's muscles in preparation for physical exercise (i.e. it is warming up).

8 **B**

The word 'hustle' in this context means *to try to persuade someone to do something*. If you are *pushy*, you try to make someone do something. Lott tries to persuade people to give him journalistic work.

9 **C**

'Chew the fat' is an idiom that means to *chat in a leisurely way*. You would chew the fat with friends. You could work it out from the context, given that Lott tells us he has lunch with friends and they 'sometimes just have a nice time, sometimes discuss ideas' (lines 20–21). It all sounds relaxed and friendly.

10 **C**

What Lott does for a significant part (a considerable amount) of the day is *procrastinate*. If you procrastinate, you delay doing something. We can see that Lott delays sitting down to write. He does his non-creative jobs, has a long lunch and a nap before he even starts writing. He goes to the office 'at around 9.30' (line 14) but does not start writing until after 3.00 p.m. (see lines 28–29). He says that he puts his creative work 'off as long as possible' (line 30).

11 **D**

Although 'slump' can be a verb (meaning to fall suddenly or collapse heavily), here it is being used as a noun. The use of the indefinite article 'an' shows this. An 'energy slump' is a sudden drop in your energy levels, which leaves you feeling tired.

12 **C**

Lott gets to his office 'at around 9.30' (line 14). Soon after 3.00 p.m. he does 'three solid hours of writing' (line 34). This means he would stop writing about 6.00 p.m. From 9.30 to 6.00 is 8 hours and 30 minutes. This tells us that Lott is out of the house for more than eight hours on a typical working day.

13 **E**

At 3.30 p.m. on a working day, Lott is working. He starts working soon after 3.00 p.m. (once he has switched on Freedom, which would not take long). He writes 'for 45 minutes solid' (line 33), so he will be working at 3.30 p.m. He says when he is working at this time that he is 'fluid, productive and full of zest' (line 36). This tells us he would not describe himself as *stumped* (baffled). He would describe himself as *zealous* and *enthusiastic* ('full of zest'). He would describe himself as *creative* and *effective* ('productive').

14 **E**

Lott tells us he writes about 2,000 words in three hours (see lines 34–35). Three hours is 180 minutes. You can estimate the answer by rounding the numbers: 2000 ÷ 200 = 10 (making the answer E).

15 **A**

When you put a word you are saying into speech marks (inverted commas) by using your fingers to indicate speech marks, you are showing that you are using a word sarcastically. Lott's wife is using *air speech marks* to show that she means *so-called* work *(*i.e. she is saying that she does not consider what Lott does to be proper work, meaning, in her opinion, he does not work hard).

Verbal Reasoning

Practice Section

1 **is** (There are certain plants that are poisonous to dogs.)

2 **where** (I don't know who I'll be up against in the final.)

3 **h** (tank / shame)

4 **a** (string / pasta)

Test

1 **eat**

The meal deal was excellent value.

The word that is not needed is *eat*.

2 **the**

The quick brown fox jumped over the lazy dog.

The word that is not needed is *the*.

3 **congestion**

The roadworks created a traffic jam in the village.

The word that is not needed is *congestion*.

4 **promotion**

A fifth footballer was transferred to the club.

The word that is not needed is *promotion*.

5 **behind**

I am fairly certain I locked the door.

The word that is not needed is *behind*.

6 **disturb**

The mobile phone was found in a restaurant.

The word that is not needed is *disturb*.

7 **we**

School finishes twenty minutes early on Fridays.

The word that is not needed is *we*.

8 **two**

The walk to the city centre takes half an hour from the station.

The word that is not needed is *two*.

9 **p**

pearl – p = earl

ale + p = pale

10 **e**

stripe – e = strip

very + e = every

11 **u**

shout – u = shot

ounce + u = ounce

12 **r**

struck – r = stuck

payers + r = prayers

13 **n**

ration – n = ratio

patter + n = pattern

14 **t**

stage – t = sage

horn + t = thorn

15 **r**

angler – r = angle

cease + r = crease

16 **f**

feast – f = east

stiles + f = stifles

17 **B**

Ella ran a marathon in 2020, so she cannot run a marathon in 2021 *and* 2022 as well.

The fewest races she can run in this 3-year period is 4 (2 marathons + 2 half marathons).

The most races she can run in this 3-year period is 5 (1 marathon + 4 half marathons).

Therefore, Statement B is false.

Individually, the other statements might be true but they cannot be proved or disproved from the given information.

18 **E**

Grannie Grace gave birth when she was 38, which was in 1985.

Her daughter gave birth when she was 35, which was in 2020.

So, the grandchild was 2 years old in 2022.

Mathematics

Test

1 **C**

Do not confuse 'impossible' with 'very unlikely'.

The actual chances of getting heads 10 times is unlikely, but it is not impossible.

Statement C is impossible because 5 + 6 = 11 but he only flips the coin ten times.

[Probability]

2 **D**

Use the coordinate axes given to complete a rough sketch.

The shape produced has two pairs of parallel lines – it is a parallelogram.

[Position and Direction; Properties of Shapes]

3 **B**

The sum of the interior angles of a quadrilateral is 360°.

95° + 105° + 100° = 300°

Fourth angle = 360° – 300° = 60°

Angles at a point on a straight line add up to 180°.

180° – 60° = 120°

$2x + 20 = 120$

$2x = 100$

$x = 50$

[Angles and Degrees]

4 **D**

0.001 + 0.2 + 0.05 = 0.251

[Estimation and Place Value]

5 **C**

1% of £380 000 = £3800

1% of £625 000 = £6250

£30 000 + £3800 + £6250 = £30 000 + £10 050 = £40 050

[Money; Fractions, Decimals and Percentages]

6 **B**

Tiers = 3, width = 30 and decoration level = 2

Cost = (30 × 3) + (0.3 × 30) + (5 × 2)

= 90 + 9 + 10

= £109

[Operations]

7 **D**

The difference between terms is 4, 8, 16, 32, …

It doubles each time.

63 + (32 × 2) = 63 + 64 = 127

[Sequences]

8 **D**

The range is the largest value minus the smallest value:

3231 – 24 = 3207 mm

There are 1000 mm in 1 m.

3207 mm = 3.207 m

[Statistics; Measurement]

9 **D**

Add the fractions by finding a common denominator (88):

$$\frac{55}{88} + \frac{8}{88} = \frac{63}{88}$$

$$\frac{88}{88} - \frac{63}{88} = \frac{25}{88}$$

[Fractions, Decimals and Percentages]

10 **C**

A full turn (360°) of the hour hand takes 12 hours.

90° (one-quarter of a turn) takes three hours or 180 minutes.

45° (one-eighth of a turn) takes half of this, so 90 minutes.

[Angles and Degrees; Measurement]

11 **D**

Volume of bathtub = 50 × 70 × 150 = 525 000 cm^3

525 000 ÷ 25 000 = 21

21 minutes after 8.50 p.m. is 9.11 p.m.

[Perimeter, Area and Volume; Speed, Distance and Time]

12 **D**

1 person = 9 small dogs

9 small dogs = 9 × 2 = 18 cats

18 cats = 18 × 2 = 36 kittens

32 kittens = 32 × 2 = 72 guinea pigs

72 guinea pigs = 72 × 4 = 288 hamsters

[Ratio and Proportion]

13 A

As in similar spatial-reasoning questions, check the direction of each shape in relation to each other shape.

On the tile, the diagonal line **does not** point towards the T, so C is incorrect.

[Reflection, Rotation and Symmetry]

14 D

Looking at 2009, 2.5 hexagons = 10 hives

So, 1 hexagon = 4 hives

In 2007, there are 5.5 hexagons.

5.5 × 4 = 22 hives

[Statistics]

15 B

Let Adam = a, Bill = b and Charles = c.

$a + b = 90$

$b + c = 109$

$c + a = 95$

Add all of these together:

$2a + 2b + 2c = 294$

$a + b + c = 147$

You know that $a + b = 90$

So, $c = 147 - 90 = 57$ kg

[Algebra]

Non-Verbal Reasoning

Subsection 1

Practice Section

1 **B** (B = odd number of sides and D = black)

2 **E** (E = dashed outline and K = pentagon)

Test

1 **A**

The top letter codes for the number of shapes and the bottom letter codes for the type of shape.

2 **D**

The top letter codes for the type of shape and the bottom letter codes for the type of shading.

3 **B**

The top letter codes for the position of the small circle and the bottom letter codes for the position of the large circle.

4 **D**

The top letter codes for the type of arrowhead and the bottom letter codes for the number of arrows.

5 **A**

The top letter codes for the type of small shape and the bottom letter codes for the position of the small shape.

6 **C**

The top letter codes for the type of small shape inside the rectangle and the bottom letter codes for the line style of the rectangle.

7 **C**

The top letter codes for the type of shape and the bottom letter codes for the number of divisions within the shape.

8 **E**

The top letter codes for the position of the arrow, i.e. inside / outside / overlapping the large shape, and the bottom letter codes for the type of large shape.

Non-Verbal Reasoning

Subsection 2

Practice Section

1 **D** (The arrow rotates 90° anticlockwise along each row.)

2 **B** (The arrow in each point of the star points in the opposite direction to the arrow in the adjoining inner triangle.)

Test

1 **C**

The shape in each point of the star alternates between a white hexagon and a grey circle.

2 **B**

The shape in each point of the star is a small black version of the shape in the opposite inner triangle.

3 **B**

The shape in each point of the star flips into the adjoining inner triangle and then rotates one place anticlockwise.

4 **A**

The shape in each inner triangle alternates between a triangle and a hexagon. The shape takes its shading from the next point of the star in an anticlockwise direction.

5 **E**

Working round the points of the star from the top and in a clockwise direction, there is one less side / line each time.

6 **D**

The shape in each point of the star is a reflection of the shape in the adjoining inner triangle but with the shading reversed.

7 **A**

There are two shapes in each inner triangle. They take their shape from the small shape in the adjoining point of the star; and they take their line styles from the two lines in the opposite point of the star (short line for inner shape and long line for outer shape).

8 **E**

The shape in each inner triangle flips into the adjoining point of the star, rotates 90° and take a plain line style. The V-shaped line in each point takes its line style from the shape in the inner triangle two places away in a clockwise direction.

Spatial Reasoning

Practice Section

1 **B**

2 **E**

Test

1 **A**

The triangle rotates 90° anticlockwise and joins to the base shape at x.
The semicircle rotates 90° clockwise and joins to the base shape at y.
The resulting shape is shown in figure A.

2 **D**

The rectangle rotates 90° clockwise and joins to the base shape at x.
The L-shape rotates 90° clockwise and joins to the base shape at y.
The resulting shape is shown in figure D.

3 **C**

The L-shape rotates 90° anticlockwise and joins to the base shape at x.
The grey square rotates 90° clockwise and is cut out of the base shape at y.
The resulting shape is shown in figure C.

4 **B**

The T-shape rotates 45° anticlockwise and joins to the base shape at x.
The grey triangle rotates 90° clockwise and is cut out of the base shape at y.
The resulting shape is shown in figure B.

5 **C**

The trapezium rotates 180° and joins to the base shape at x.
The white square rotates 90° anticlockwise and joins to the base shape at y.
The grey square rotates 180° and is cut out of the base shape at z.
The resulting shape is shown in figure C.

6 **A**

The C-shape rotates 90° anticlockwise and joins to the base shape at x.
The grey triangle rotates 180° and is cut out of the base shape at y.
The trapezium rotates 180° and joins to the base shape at z.
The resulting shape is shown in figure A.

7 **E**

The grey square rotates 90° anticlockwise and is cut out of the base shape at x.
The rectangle rotates 90° clockwise and joins to the base shape at y.
The trapezium rotates 180° and joins to the base shape at z.
The resulting shape is shown in figure E.

8 **D**

The first shape rotates 90° anticlockwise and joins to the base shape at x.
The second shape rotates 90° anticlockwise and joins to the base shape at y.
The third shape rotates 90° anticlockwise and joins to the base shape at z.
The resulting shape is shown in figure D.