

11 Plus Maths and Non-Verbal Reasoning Enhance GL Course Preview

This preview is designed to show you, in some depth, the work we'll go through in this course. It covers the Maths and Non-Verbal Reasoning elements of GL 11 Plus exams.

Who should be doing it?

- The course is designed to enhance the skills of pupils going for a GL 11 Plus Exam.
- It should be central to the work of any child preparing at home.
- It is also very useful for any child using a tutor or going to a tuition centre. **Many Tutors use our courses as the basis of the work they do and find it especially useful for homework. If your tutor doesn't give homework then this course will fill the gap.**

Why is the course so successful?

- The course is fully planned which makes life much easier for parents than using books alone.
- We build in just the right amount of revision as we go along to ensure skills stay fresh.
- The course gradually introduces children to timed tests in the right way so that they build their skills and confidence as they go.
- While the course is regularly updated the core of it has been used for many years with proven success.

Who is this course right for?

This course is ideal for any pupil with around 15-30 weeks to go until the GL 11 Plus exam. The course is delivered in 20 parts and ideally a week would be spent on each. It could be completed in 15 weeks by working more intensively or in a more relaxed way in 30 weeks.

- **No book covers the ground so completely.**
- **This course is fully structured, revision is built in.**
- **There's much less planning work for parents to do.**

SCROLL DOWN TO SEE COURSE EXAMPLES



Please make a special effort with accuracy, it's really important



Maths & Non-Verbal Reasoning Enhance - Part 1

This course will help you to develop all the skills you need for the exam. If you do a little work each day and work consistently you will give yourself the best chance.

Maths

1. Working Accurately

- **Accuracy table.** Children who can carry out times table based maths quickly and accurately will be well placed to succeed. This test indicates how good your skills are. It's tough but remember to practice.
- **Spot the mistakes.** They will be made. You should be able to spot the mistakes they make.

2. Mental Maths Techniques Some tips for working

3. Mental Maths. These should be aiming for what you should know.

4. Sudoku Fractions and Decimals answer ?

- 5. **Shapes Revision.** It's important to know your shapes inside out. Read this carefully, cover up the words and see if you can remember the descriptions. Get someone to read the descriptions out loud and see if you can name the shapes.

Clear Instructions

Every part of the Maths and Non-Verbal Reasoning Enhance course starts with a front sheet which looks like this. It details every item of work that is in that part and where relevant gives you some guidance on how to approach each item and what to focus on. Full answers are provided for every question.

Non-Verbal Reasoning

- 6. **NVR Type 1 - Like Shapes.** Your first Non-Verbal Reasoning question type. These are not difficult to learn but you need to concentrate to deliver accurate work. Please spend enough time understanding the question type and looking in detail at the answer then go on and do the five questions. If you make a mistake, it's really easy to correct. If you don't improve. Very full at the end of the concept.

- Please sign below when you have finished
- Your helper may have to sign

Signed: (Parent/Teacher)

Organised for you

One of the main problems with using books is that it is difficult to know which ones to buy and what order to do the work in. We know from feedback that this course solves that problem for many parents leaving them free to help their child.

We hope you enjoyed your first part of the course.



Speed and Accuracy Test

- You have five minutes. Children should be working towards scoring 100%.
- Watch out for the changes to + / ÷ / - / ×
- This test will be repeated five times, where mistakes are made it will be an indication that further times tables work and attention to detail is necessary.

$8 + 7 =$	$9 - 4 =$	$6 \times 7 =$	$54 \div 6 =$	$8 + 4 =$
$7 \times 5 =$	<i>Speed and Accuracy Tests</i> <i>At the beginning of the course we spend time exposing whether pupils have sufficiently solid core skills. As these skills provide the fundamental basis from which children will develop, ensuring these are well established will aid them during the other sections of the course.</i>			
$12 - 7 =$				
$96 \div 8 =$				
$6 \times 3 =$				
$5 + 8 =$	$14 - 9 =$	$0 \times 8 =$	$8 + 6 =$	$12 - 8 =$
$5 \times 6 =$	$44 \div 4 =$	$7 + 9 =$	$28 \div 7 =$	$9 \times 6 =$
$5 + 7 =$	$15 - 6 =$	$48 \div 6 =$	$5 + 4 =$	$64 \div 8 =$
$16 - 8 =$	$36 \div 9 =$	$8 + 8 =$	$42 \div 7 =$	$7 \times 7 =$
$7 \times 6 =$	$9 - 6 =$	$72 \div 9 =$	$9 + 8 =$	$108 \div 9 =$

Score /50

Spot the Mistakes - Maths

- Victor has completed his Mental Maths task but unfortunately he's made a number of mistakes. His answers are underlined.
- Circle the mistakes. See if you can work out what he might have done wrong

① $300 +$ *Spot the mistakes* $=$ 1050mm

② $2 \frac{1}{2}$ Kg *We also use other accuracy tests like this Spot the Mistakes test. Children that cannot work accurately will not do well in an 11 plus exam because of the time pressure.*

③ $£1.00 - 58p =$ 42p

⑨ $116\text{mm} =$ 11cm 6mm

④ Find the sum of £1.15 and £2.85

⑩ $\frac{1}{4}$ of £4.16 = £1.04

⑤ Find the costing: *Find the mistakes* $90\text{m} =$ 290m
Helping children to switch on their self-checking skills helps them work more accurately in the exam.

⑥ What is the product of $9 + 99 =$ 108

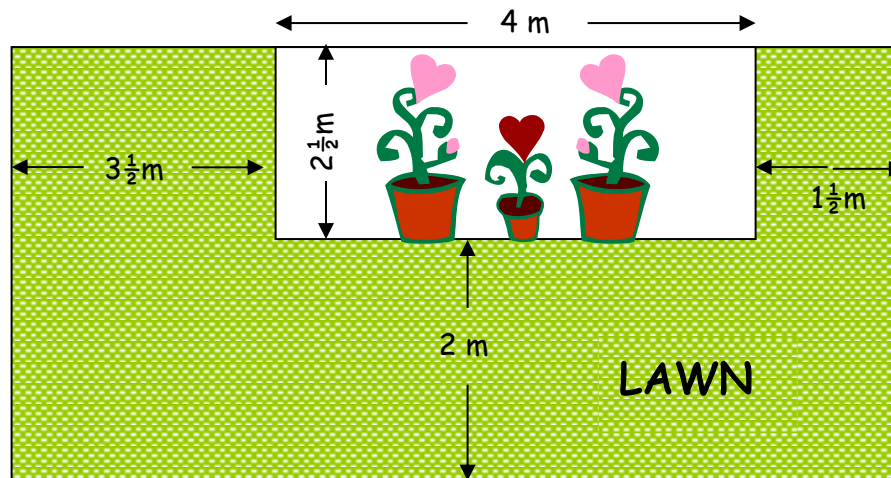
⑫ What is the product of 8 and 50 = 58

Marks /

Area Problems

A rectangular garden comprises a rectangular flowerbed surrounded on three of its sides by a lawn.

Answer the following questions which relate to this diagram.



a) **Area Problems**

We also make sure we cover the core topics

b) *children may get questions on. This sheet is one we use to help children learn about area.*

c)

garden.

Answer: _____

d) Work out, in square metres, the area of the flowerbed.

Answer: _____

e) What is the area of the lawn?

Answer: _____

f) Find the cost of re-sowing the lawn if grass seed costs £1.86 for each square metre of lawn.

Answer: _____

The BODMAS Rule

The rule for the order in which you conduct calculations is: **BODMAS**

This means:

Brackets **O**rders **D**ivision **M**ultiplication **A**ddition **S**ubtraction.

In other words:

1. You must work out the sum in the **B**racket first and then complete any **O**rders (this also means indices, powers, or roots e.g. 3^2).
2. Next you must work out any **D**ivision or **M**ultiplication.
3. Finally complete any **A**ddition or **S**ubtraction required.

Remember - if a number appears immediately before a bracket it means you must **M**ultiply (the result of the sum in the bracket) by that figure, so: $5(3.1 + 1.9)$ means $5 \times (3.1 + 1.9) = 5 \times 5 = 25$

Here is an example of the **BODMAS** rule in action:

$$\begin{aligned} &6(1.2 + 0.8) - (4.6 - 1.6) \quad \text{Do the } \mathbf{B} \text{racket sums first} \\ &= 6 \times 2 - 3 \\ &= 12 - 3 \\ &= 9 \checkmark \end{aligned}$$

BODMAS

As part of each topic introduction/review we include further work and examples to ensure knowledge has sunk in properly.

Now look at this question:

$$6(2.36 + 5.62) =$$

$$\begin{aligned} &6(2.36 + 5.62) = \\ &6 \times 7.98 = 47.88 \checkmark \end{aligned}$$

Do the **B**racket sum first - $2.36 + 5.62 = 7.98$
Then **M**ultiply

Please file this away safely because you will need to refer to it again.

TIMED TEST NUMBER 1

You have 30 minutes to complete this test.

Write the missing number in the box:

1. *Timed Tests*
 We start doing easier timed tests early on to get children used to working under the time constraints similar to that of an exam.

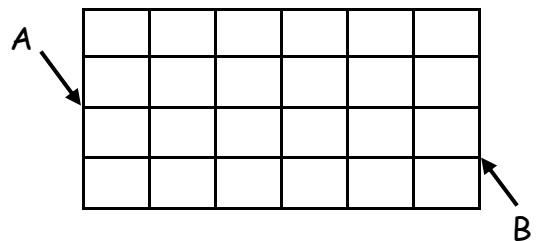
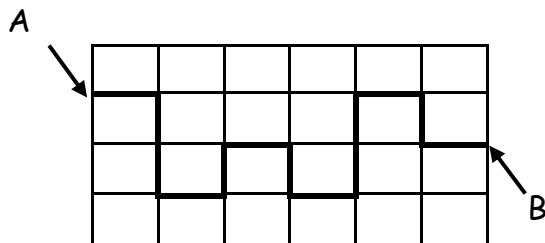
3.
$$\begin{array}{r} 10\ \square \\ 7 \overline{) 763} \end{array}$$

$$\begin{array}{r} 153 \\ 5 \overline{) 7\square 5} \end{array}$$

This calculation has the same number missing from each box. What is it?

5. *Timed Tests*
 While easier than full 11 Plus tests, these tests include questions which could end up in the test itself. This is beneficial as it gets students familiar with the types of question they might encounter.

Start at A and go along the lines, finishing at B.



Mathematics Revision Test 2

1. $323.76 + 19$ hundredths
= _____

2. Draw a hexagon in this space:

3. $13^2 =$ _____

12. $12 \times 8 =$ _____

13. $6 \times 7 =$ _____

14. $9 \times 6 =$ _____

15. How many tenths in 23.9?

Maths Revision Tests

Throughout the course we ensure children are using the skills they have regularly. This is an example of our regular revision test sheets. These sheets cover a great deal of the syllabus and little by little help to consolidate knowledge and give children confidence.

4. Draw an obtuse angle - label it.

NO/YES

5. Draw a rhombus

20. How many lines of symmetry has a hexagon?
= _____

SCORE BOX:

Maths Revision Tests

With Maths it's essential that children use their skills regularly so we provide enough of these and other pages to ensure children are working at the level of frequency.



Find the area of this shape:
= _____

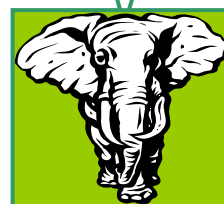
9. $4.9 \text{ L} =$ _____ mls

10. Write 555 tenths as a decimal = _____

11. 9 squared = _____

Are you improving? YES/ANY MINUTE NOW

how to do long



5. Complete the following money problems.

a. A single bus fare to work costs £1.25. How much have I spent altogether on bus fares by the time I have returned home? _____

b. If I go to the newsagent and buy 5 magazines costing £3.99 each. How much do I have left? _____

c. I bought in _____
 question: *Midway through we start to give a full timed paper in each part of the course. We ask*

6. Answer: *parents to ensure this is administered correctly.*

a. Six squared = _____ e. The square root of 6 = _____

b. The cube root of 27 = _____ f. Two fifths of 75kg = _____

c. 60% of £60.00 = _____

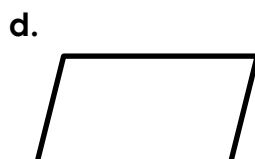
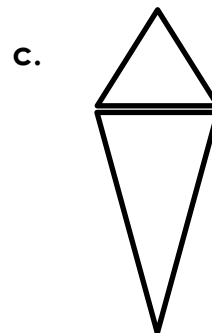
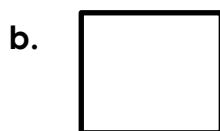
g. $4(x + y)$ when $x = 6.1$ and $y = 3.8$ = _____

d. $2(p - q)$ when $p = 4.7$ and $q = 2.3$ = _____

Maths Papers

7. If *Children get every opportunity to learn to complete the papers within the time allowance and the work we have done on core skills and topics means they should be focussed on accuracy.*

8. How many lines of symmetry do these shapes have? Some may have none.



17. When Peter went to Spain recently the exchange rate was 1.2 Euros to the pound sterling. He bought a bottle of wine costing 6.7 Euros. What was the cost of the bottle in pounds sterling? (round your answer to the nearest penny).

18. A family built a pond in their garden. When it is full it holds 9900 litres of water. The pond is filled from the garden tap which delivers a litre of water every 3 seconds. How long will it take to fill the pond? _____

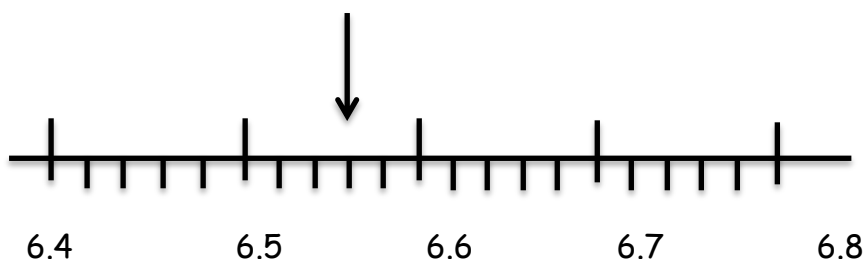
19. Which of

A. 3.075

20. My bus started 12 m

took 45 minutes. At what time did it arrive? _____

21. What measurement does the arrow point to on the scale below? _____



22. A jar of marbles was made up like this:

	Large	Small
Black	8	14
Red	12	16

What percentage of the marbles were small? _____

Non-Verbal Reasoning

1. LIKE SHAPES / TYPE 1

In these questions you will be given an example where one shape becomes another shape. You will then be given a question shape and be asked to choose which one of five shapes it should become. You should use the example to help you choose. You should look at the example and understand exactly what changes for it to become the second shape and then apply the same reasoning to the question shape.

What to look out for

As with all Non-Verbal Reasoning question types this is largely a test of **logic** and **close observation**.

- How many sides
- Are they rotated
- Are they reflected
- Have the shapes a diagonal line
- What size are the shapes?
- What thickness are the shapes? Bold
- Do shapes touch

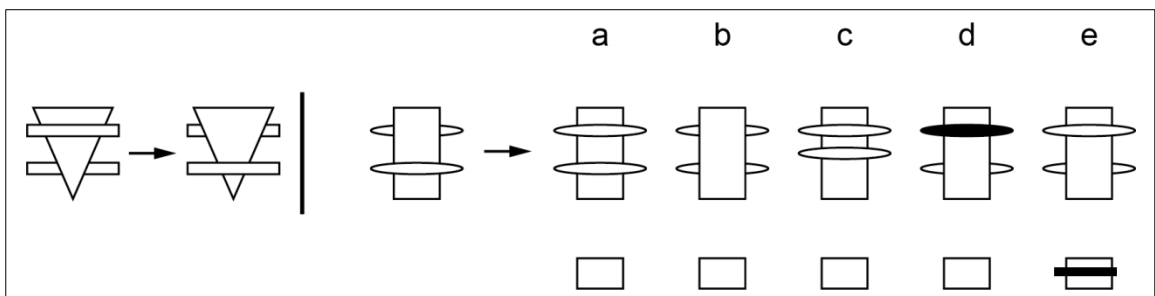
Like Shapes - Explanation

We identify the main types of non-verbal reasoning questions. We introduce each with a very detailed explanation and example. We explain what the questions entails and what children need to look out for to solve it.

Technique tips

- Focus exactly on one thing at a time. More than one thing may have changed.
- Make a list of the changes if necessary.
- Once you have done this look at the answer options and see which has changed in the same way.
- Often you will be left with two options which are close, there will always be a small distinguishing item which makes one of these a closer match than the other (e.g. direction of diagonal lines within a shape). You will need to renew your focus to find it.
- Unless you are doing a timed test do one question at a time. Give your answer then check if it is correct and review the explanation. This takes time but looking at the answer and explanation while the question is still fresh is the only way to learn.

Example



Explanation

There is no change in the large shape from the first set of shapes to the second. However the shape that is behind the larger moves to the front and the other shape that is in front moves behind.

Non-Verbal Reasoning

1. LIKE SHAPES / TYPE 1

1

2

a b c d e

Like Shapes - Examples

Having explained the question type we then give children a few questions to try out to secure their learning. Each question has a very detailed solution so that children can learn from their mistakes.

3

4

5

Learning Street

11 PLUS PREPARATION

NON-VERBAL REASONING PAPER

Name:	
Date of Birth:	
Today's Date:	

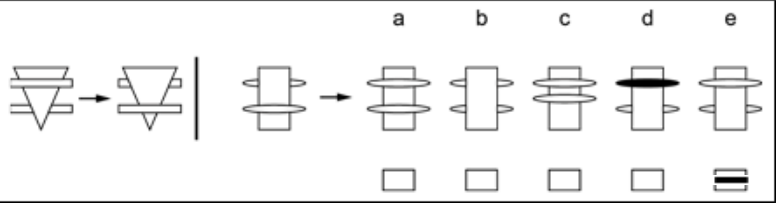
**READ THESE INSTRUCTIONS CAREFULLY
BEFORE STARTING.**

- You have been given a **Timed Papers** example is
- Mark your answers in the space provided. *Once we have introduced children to each of the different Non-Verbal Reasoning questions types we have identified we then start giving them timed revision tests.*
- This paper is given a **Timed Papers** example is
- Each question is worth one mark. If you can't do a question, then move on.
- If you finish early check your answers for mistakes.
- Once the test has started you may not ask for help.

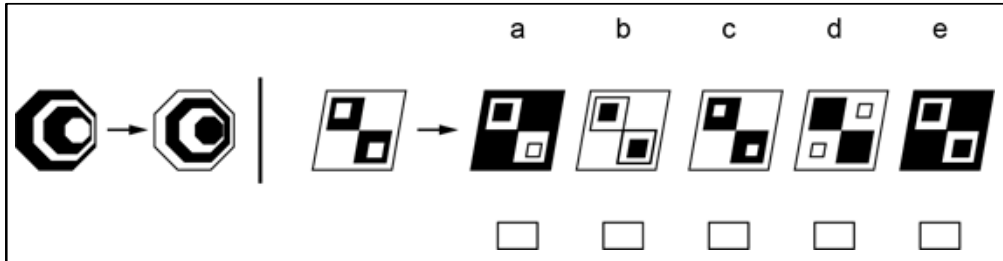
1. LIKE SHAPES / TYPE 1

Work out which of the answer shapes is related to the question shape in the same way that the example shapes are related.

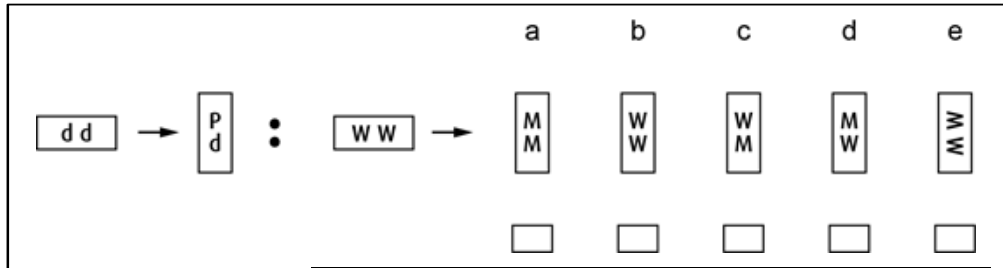
Example



1



2



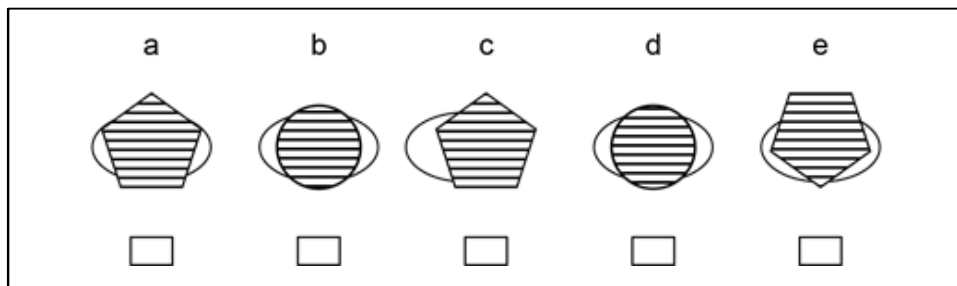
Timed Papers

This test contains a mixture covering all the different question types with a tough time allowance of 15 minutes to get children used to the exam pressure.

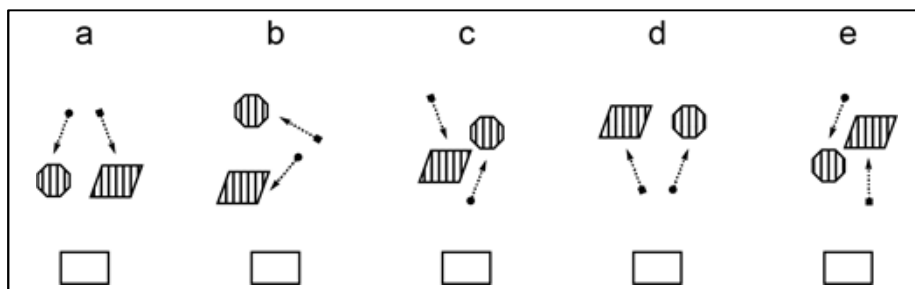
2. ODD ONE OUT / TYPE 2

Work out which of the shapes is different to the rest.

1



2



3. ROTATIONS / TYPE 3

Work out which of the answers is a rotation of the question shape.

Example

	a	b	c	d	e
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1

	a	b	c	d	e
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2

	a	b	c	d	e
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. CODE BREAKER / TYPE 4

Look at the sequence to work out how the codes match the shapes, then select the correct answer code to match the question shape.

Example

	a	b	c	d	e									
		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>									
<table border="1"><tr><td>AS</td><td>BR</td><td>AT</td><td>CS</td></tr></table>	AS	BR	AT	CS	<table border="1"><tr><td>AU</td></tr></table>	AU	<table border="1"><tr><td>BT</td></tr></table>	BT	<table border="1"><tr><td>CT</td></tr></table>	CT	<table border="1"><tr><td>CS</td></tr></table>	CS	<table border="1"><tr><td>BU</td></tr></table>	BU
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BU														
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1

	a	b	c	d	e																						
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2

	a	b	c	d	e									
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AK	BL	BM	CL											
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AM														
CK														
AL														
CM														
BK														
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									

ANSWERS - MATHS ENHANCE - PART 12

Revision Test 9

1. 40°
2. 9m
3. $\frac{3}{4}$
4. £28
5. 1.0 1.2
6. 8
7. 3.96
8. 52
9. 7
10. 270g

- 2.
- a. 10
- b. 28
- c. 75
- d. 6.5
- e. 4

Full answers for every question

There are answers provided for every question in each part of the course.

Where a full detailed explanation is needed we give it.

Equations

1. 4
2. 11
3. 12
4. 15
5. 7
6. 7
7. 15
8. 28
9. 7
10. 14
11. 18
12. 20

- a. 800
- e. 8500

- 5.
- a. 42
- b. 26
- c. 13
- d. 126
- e. 21

Maths paper

Page 1

- 1.
- a. 120,000
- b. 2600
- c. 300,000
- d. 180,000
- e. 14,400

- 6.
- a. £9.55
- b. 5
- c. 125

- 7.
- a. $\frac{1}{4}$ hr
- b. $\frac{3}{4}$ hr

ANSWERS - MATHS ENHANCE - PART 12

- c. $1/10$ hr
- d. $7/12$ hr
- e. $1/5$ hr

Page 3

- 8.
 - a. square
 - b. rectangle
 - c. equilateral triangle
 - d. kite
 - e. Right-angled triangle
 - f. parallelogram

- 9.
 - a. 72
 - b. 37
 - c. 20
 - d. 15.75

Page 4

- 10.
 - a. 180 Euros
 - b. 225 US Dollars
 - c. 285 Australian Dollars
 - d. 285 Swiss Francs
 - e. £10
 - f. £2
 - g. £280
 - h. £25

11.

- a. -3 storage
- b. -4 computers
- c. -2
- d. -8
- e. Lift A = -1 Lift B = ground floor

Page 5

- 12.
 - a. 90°
 - b. 180°
 - c. 150°
 - d. 240°
 - e. 270°
 - f. 150°

- 13.
 - a. 7hr 15 mins
 - b. 1kg

Page 6

- 14.
 - a. F & R
 - b. H & W
 - c. H

- 15.
 - a. 4
 - b. 2
 - c. 2