THE GRAMMAR SCHOOL
AT LEEDS

Be Inspired

SAMPLE MATHEMATICS ENTRANCE EXAMINATION
ENTRY TO YEAR 7

Time Allowed: 60 minutes

Write down all your working and put your answers in the spaces provided.

Calculators are not allowed.

Try to answer all the questions.

Some of the questions may seem unfamiliar. Do not spend too much time on these at first, but move on to questions you like more. You can always return to the unusual ones later.

1.　　　　Work out　　623 +　346

Answer: _____　　[1]

2.　　　　Work out　　　　1532 − 467

Answer: _____　　[1]

3.　　　　Work out　　　　527 × 7

Answer: _____　　[1]

4　　　　Work out　　1029 ÷ 7

Answer: _____　　[1]

5.　　Work out:

(a)　　(6-2) x 3

Answer: _____　　　[1]

(b)　　5 + 3 x 7

Answer: _____　　　[1]

(c)　　12.6 + 3.9

Answer: _____　　　[1]

6. A blue money box has six 20p pieces and nine 5p pieces in it.

A red money box has one 50p, eight 10p pieces and twelve 2p pieces in it.

(a) What is the total sum of money in the two money boxes?

Answer: _____ [1]

(b) Which money box has more money in it?

Answer: _____ [1]

(c) How much more money is in this box?

Answer: _____ [1]

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7. Write **in figures** the number five hundred and seven thousand and thirty seven.

Answer: _____ [1]

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8. Work out ¾ of 36

Answer: _____ [2]

9. Work out   70% of 5600

Answer: _____   [2]

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10. If 5^2 means 5 x 5, work out 5^3.

Answer: _____   [2]

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11. For each of the following sets of numbers put + - x or ÷ in the box to make the calculation complete.
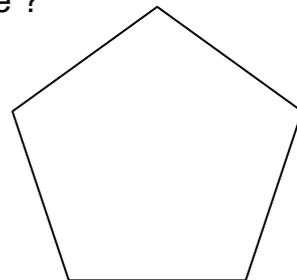
(a)   9 ☐ 4 = 5   [1]

(b)   56 ☐ 7 = 8   [1]

(c)   3 ☐ 4 ☐ 2 = 11   [1]

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12. (a) How many lines of symmetry does this shape have ?

Answer: _____

(b) Draw in the lines of symmetry on the shape

[2]

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13. Write down in the spaces the next two numbers in each sequence.

(a) 6,   12,   18,   24,   30,   _____ ,   _____   [2]

(b) 1,   3,   6,   10,   15,   _____ ,   _____   [2]

(c) 1,   4,   9,   16,   25,   _____ ,   _____   [2]

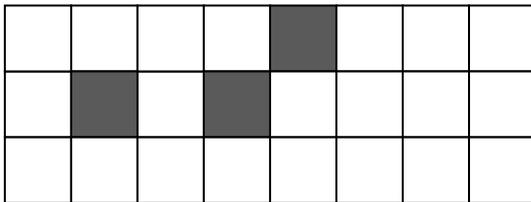**14.** Use this completed calculation to find the answers to the calculations below:

40 x £ 12.60 = £ 504

(a)   80 x £12.60 =   [1]

(b)   20 x £12.60 =   [1]

(c)   120 x £ 12.60 =   [1]

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15. How many more squares need to be shaded on the grid below so that 25% of   the entire grid is shaded?

Answer: _____squares [1]

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16. Use the picture of the thermometer on the right to help you answer the following questions:

(a) If the temperature at midnight was -3°C and the temperature at midday was 15°C, by how many degrees has the temperature risen ?
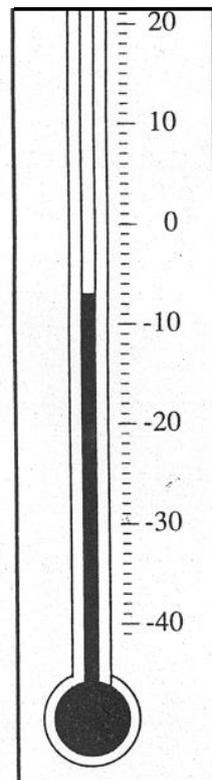
Answer: _____ °C [1]

(b) On a winter evening the temperature fell by 9°C from 4°C. What was the new temperature?

Answer: _____ °C [1]

(c) A plane left Bangkok where the temperature was 35°C and arrived in New York where it was twenty seven degrees colder.
What was the temperature in New York?

Answer: _____ °C [1]

17. Circle the number below that gives the best **estimate** to the sum, do not attempt to work out the actual answer.
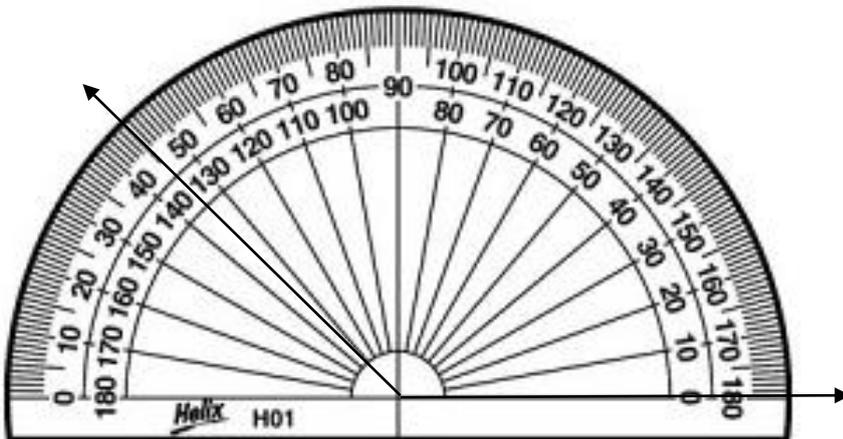
21.8 x 39.4

Circle an answer

60   **80**   **600**   **800**   **6000**   **8000**   [1]

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18. Write down the size of any angle that is

(a) acute _____ [1]   (b) reflex _____ [1]

Write down the size of the angle being measured

Answer: _____ [1]

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19. (a)   On Saturday, John ran for 1 hour and 8 minutes.

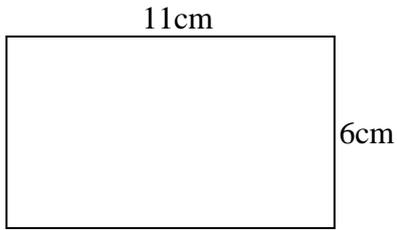If he finished at 11:42 am, at what time did he start his run ?

Answer: _____ [1]

(b) On Sunday, John ran for 97 minutes.

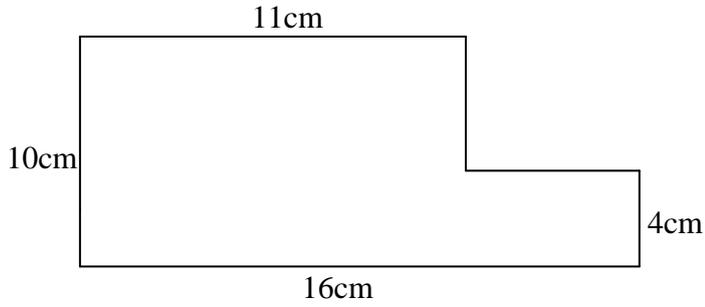If he started his run at 9:18 am, at what time did he finish his run?

Answer:_____ [1]

20. (a) Find the perimeter of the rectangle

11cm

6cm

Answer: _____ cm   [1]

(b) Find the area of the following shape

11cm

10cm

4cm

16cm

Answer: _____ cm^2 [2]

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21. Complete the following sum:

$$
\begin{array}{ccc}
\boxed{} & 4 & \boxed{} \\
-\quad 2 & \boxed{} & 8 \\
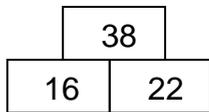\hline
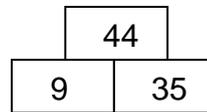3 & 5 & 4
\end{array}
$$

[3]

Section B

In this section the questions are more difficult. Do your best with these questions but do not expect to be able to answer all the questions. Do not spend too long on each one.

B1. Number towers are formed by adding the 2 numbers next to each other to form the number on top.
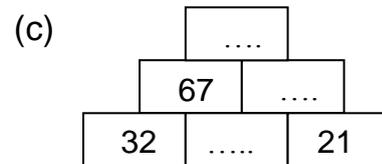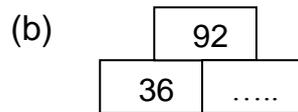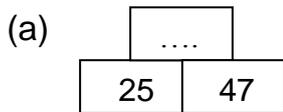
Examples

38	
16	22

44	
9	35

Since 16 + 22 = 38   Since 9 + 35 = 44

Complete the following number towers

(a)

....	
25	47

(b)

92	
36	.....

(c)

....		
	67	....
32	.....	21

[5]

B2. Michael looks in a book and sees an equation   p = 2q + 3.

It means   " p is equal to two times the value of q and then add three "

<u>Example</u> If q = 6, then p = 2 x 6 + 3 = 15

a) Find p if   (i) q = 4   Answer: p = _____   [1]

(ii) q=10   Answer: p = _____   [1]

b) If p = 35, write down the value of q

Answer: q = _____   [1]

B3.   a)   The numbers from 1 to 9 are placed on a grid so that every row, column and diagonal adds up to 15.

The numbers 3, 4, 7 and 8 have been put in their correct places.

Complete the rest of the grid. Remember that every row, column and diagonal must add up to 15.

4		
3		7
8		

[1]

b)   The squares of the numbers in the first column of the grid are added together below:

$4^2 + 3^2 + 8^2 = 16 + 9 + 64 = 89$

Add the squares of the numbers in the third column together and write down the total you obtain.

Answer: _____   [1]

_____

B4.   A factor of a number will divide exactly into that number without a remainder.

The factors of 8 are 1, 2, 4, 8, because all of these numbers divide into 8.

a) Write down all the factors of 18   Answer:_____   [2]

b) Sophie chose a number between 10 and 20. When she adds up all its factors, the total is 31.

What number did Sophie choose?

Answer: _____   [1]

THE END
If you have time go back and check your work

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SAMPLE ENGLISH READING ENTRANCE EXAMINATION
ENTRY TO YEAR 7

Time allowed: 45 minutes

There is a passage to read and then you have about
40 minutes to answer the questions.

Write your answers on lined sheets of paper.

**Do not forget to put your name on every sheet of paper. Please
write your first name and family name (surname) in BLOCK CAPITAL
LETTERS.**

Read the following passage carefully and then answer all the questions that follow. Answer in full sentences and in your best handwriting.

The passage is taken from a story called 'The Dark House'.

In the passage, Simon is secretly missing a day of school to go to some woods. The previous day he had been on a train approaching a tunnel there and he thought he had seen a mysterious girl watching him as he travelled past.

At 9.30 am the next morning, as he was sitting on the 36 Bus to Leeds, Simon was feeling nervous. He was in school uniform, sitting with his new schoolbag and feeling at the same time clever and worried. All was going well, though, as he had got up as usual, emailed school from his mother's account to say he was ill with a cold, and set off in the opposite
5   direction to school. He thought the story of a cold was a **brainwave**: he had **toyed** with the idea of something dramatic such as malaria, but he thought school might be stupid enough to phone home to ask how he was. They were always going on about pastoral care and the last thing he needed was a keen tutor asking after him. Boring was best and a cold was boring. He just had to keep his head down and hope that no-one on the bus asked any
10 questions.

As he left the bus near the river he could see the railway line in the distance to his right, high in the air on a long viaduct, and he had remembered the train had crossed a long bridge just before the tunnel. So, with his heart in his mouth, he set off on foot. Before many minutes had passed he found himself on the edge of what seemed a huge forest
15 between him and the railway line, now marked by the rumble and screech of a train going past invisibly in the distance. As he listened, the sound **ebbed and flowed** from the train and then, without warning, the sound vanished and all was silent. It could only be the tunnel, swallowing up the noise of the train as it roared into it. Simon's excitement was making him breathless: this was all going so amazingly well. He headed over a fence and
20 into the dark forest.

· · · · · · · · · ·

Twenty hours earlier Annie Richards had been walking through exactly the same forest.
She loved her woods, the swish of the trees and the comforting shadows and she was barefoot because she wanted to feel the touch of the earth on her feet. Even on a chill
25 March Sunday she needed to do this, to be able to feel connected. "Grounded…" she thought to herself, smiling at the sudden meaning of the word.

Annie spent hours in her imagination and the worlds she built inside her head had become very special to her: safe, full of wonder and **enchantingly** exciting to spend time in. To make it happen, though, she needed more and more to be away from home and from her

30   so-called school friends. It used to bother her, but now she no longer minded feeling different. When her class grew bored in an English lesson and passed the time enjoying **furtive** texting, she just wanted the journeys into the imagination to go on for ever.

At home, her dad and step-mother were busy with their own problems, trying to re-write history to make their present more comfortable, and the last thing they needed was a

35   daughter who wanted to be different. They wanted and needed a low-maintenance child, a neither heard nor seen child, and, little by little, she was granting them their wish.

So here she was in her woods, where she could recover herself in the reassuring hush of the trees and the reliable solidity of the earth under her feet. In her perfect world she would be a beautiful princess, happily alone in her secluded castle, but half-hoping that

40   one day a knight would come riding out of the dawn to take her somewhere new and exciting in a land beyond her daydreams. She knew this was just a childish fantasy, but she still enjoyed the simple pleasure of picturing such a scene.

This particular Sunday it had been doubly important for her to come to the forest.

QUESTIONS

1. What sort of clothes was Simon wearing? [2 marks]

2. How had he got out of going to school that day? [2 marks]

3. What did Simon mean by 'Boring was best'? (line 8) [2 marks]

4. A viaduct is a long, high bridge. When Simon saw the viaduct why did he know he was heading for the right place? (line 12) [2 marks]

5. Why do you think the sound of the train suddenly disappeared? [2 marks]

6. Explain why Annie smiled when she said the word 'Grounded…' (line 25)

   [2 marks]

7. In your own words, describe Annie's perfect world in her daydreams (lines 38 - 41)

   [3 marks]

8. Why do you think the story has a gap between lines 20 and 22? [2 marks]

9. Explain the meaning of the following words as they are used in the story. Write your explanations in full sentences: [5 marks]

   a. Brainwave (line 5)

   b. Toyed (line 5)

   c. Ebbed and flowed (line 16)

   d. Enchantingly (line 28)

   e. Furtive (line 32)

10. Write about three lines describing Annie. What sort of person do you think she is?

    [3marks]

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SAMPLE ENGLISH WRITING ENTRANCE EXAMINATION
ENTRY TO YEAR 7

Time Allowed: 45 minutes

There is a passage to read and you then have about
40 minutes to write your own story.

Write your answers on lined sheets of paper.

**Do not forget to put your name on every sheet of paper. Please write your
first name and family name (surname) in BLOCK CAPITAL LETTERS.**

This story is about two school children, Mary and Peter who have survived an air crash and find themselves lost and alone in the central Australian desert…

It was silent and dark, and the children were afraid. They huddled together, their backs to an outcrop of rock. Far below them, in the bed of the gully, a little stream flowed inland – soon to peter out in the vastness of the Australian desert. Above them the walls of the gully climbed smoothly to a moonless sky.

The little boy nestled more closely against his sister. He was trembling.

She felt for his hand, and held it very tightly.

'All right, Peter,' she whispered. 'I'm here.'

She felt the tension ebb slowly out of him, the trembling die gradually away. When a boy is only eight a big sister of thirteen can be wonderfully comforting.

'Mary,' he whispered, 'I'm hungry. Let's have something to eat.'

The girl sighed. She felt in the pocket of her frock, and pulled out a paper-covered stick of barley sugar. It was their last one. She broke it, gave him half, and slipped the other half back in her pocket.

Why they were whispering they didn't know. Perhaps because everything was so very silent: like a church. Or was it because they were afraid; afraid of being heard?

For a while the only sounds were the distant rippling of water over stone, and the sucking of lips round a diminishing stick of barley sugar. Then the boy started to fidget, moving restlessly from one foot to another. Again the girl reached for his hand.

They could see nothing. They could hear nothing – apart from the lilt of the rivulet – for it was still too early for the stirring of bush life. Later there'd be other sounds: the hoot of the mopoke, the howl of the dingo, and the leathery flip-flap-flip of the wings of flying foxes. But now, an hour after sunset, the bush was silent and frighteningly still: full (to the children) of terrors all the greater for being unknown.

The hours meandered past like slow, unhurrying snails. At last the boy's head dropped to his sister's lap. He snuggled closer. His breathing became slower, deeper. He slept.

Now your teacher will discuss with you some of the ways in which you may develop the story and make it exciting.

Your Writing Task

Continue the story, writing about the experiences Mary and Peter may have had when they woke up the following morning in the Australian desert.

Think about what they have may seen, who or what they may have met and how they tried to survive in those difficult conditions.

Remember to include interesting descriptive words and try to write as accurately as possible.