

Year 7 (11+) Entrance and Scholarship Examination

Sample Paper

Maths

Name:

Time: 45 minutes

Instructions:

Section A contains 20 multiple-choice questions.

Answer each question by drawing a circle around the correct answer like this:

A	B	C	D
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Use the space on the paper for working out.

Section B contains 5 problem-solving questions.

Attempt all questions and use the space on the paper to clearly show your working out. There is a space at the bottom of each question for you to write your final answer.

You may not use a calculator. Rulers are permitted, but any **other measuring devices (e.g. protractors) are not allowed.** All diagrams are not drawn to scale, so it will not help you to measure them yourself as part of your workings.

Section A : Multiple Choice Questions

1.	<i>What is $1234 + 5678$?</i>			
	(A) 6812	(B) 6902	(C) 6912	(D) 7012

2.	<i>What is the value of the digit 5 in the number 456,789?</i>	
	(A) Fifty thousand	(B) Five million
	(C) Five hundred thousand	(D) Five thousand

3.	<i>What is the value of $\frac{2025}{2+0+2+5}$?</i>			
	(A) 225	(B) 229	(C) 235	(D) 239

4. The first term of a sequence is 3.
The next term of the sequence is found by adding four to the previous term.



3, 7, 11, 15, __, __, ...

Which of these numbers will **not** appear in the sequence?

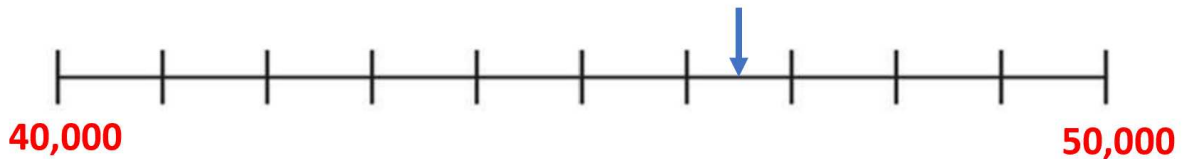
(A) 31

(B) 79

(C) 99

(D) 104

5. What number is shown by this arrow?



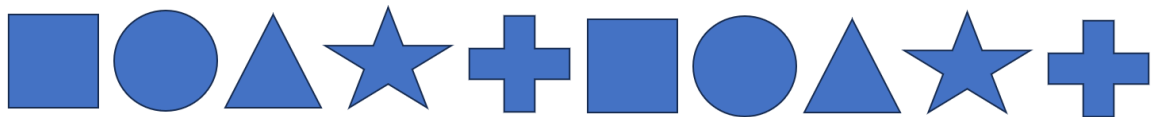
(A) 40,065

(B) 40,650

(C) 46,050

(D) 46,500

6. Here is a repeating pattern of shapes.



What would be the 100th shape in this pattern?

(A)



(B)



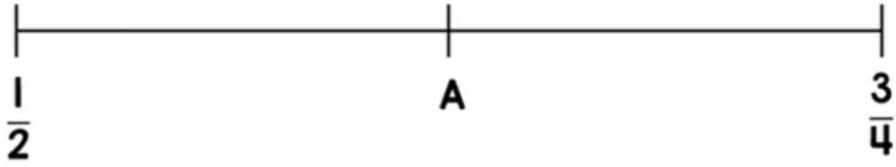
(C)



(D)



7.	A train leaves London at 11.09am and arrives in Edinburgh 255 minutes later . <i>At what time does the train arrive in Edinburgh?</i>			
	(A) 1.04pm	(B) 2.24pm	(C) 3.24pm	(D) 4.04pm

8.	The fraction A is halfway along this number line. <i>What is the value of A?</i>			
				
(A) $\frac{2}{3}$	(B) $\frac{3}{5}$	(C) $\frac{4}{5}$	(D) $\frac{5}{8}$	

9.	<i>Which of these calculations has an incorrect answer?</i>			
	(A) $940 \div 4 = 235$	(B) $1180 \div 5 = 236$	(C) $1428 \div 6 = 237$	(D) $1666 \div 7 = 238$

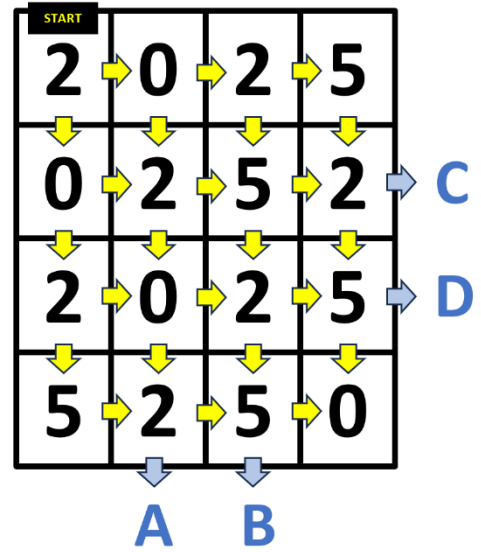
10.	<p>Akhil is rolling a dice and recording how often the number shown is odd or even.</p> <p>Currently, the ratio of odd to even numbers rolled is 5:7.</p> <p>He has rolled an even number eight more times than he has rolled an odd number.</p> <p><i>How many times has Akhil rolled the dice altogether?</i></p>			
	(A) 20	(B) 28	(C) 48	(D) 96

11. Here is a challenge maze.

Starting at the top left corner, you may only move from one square to another by moving down or to the right.

Your aim is to **reach one of the exits (A, B, C or D) without passing through the number 2025.**

If you pass through a 2, 0, 2 and 5 (in that order), at any point in your journey, you have failed the challenge.



Which of the four labelled exits is the only one by which you can complete the challenge?

A

B

C

D

12. Eltham Eagles FC have opened a new stand in their stadium.

The stand has **15 blocks** of seats.

Each block has **13 rows**, and each row has **24 seats**.

How many seats are there in the stand altogether?


(A) **1,170**

(B) **4,360**

(C) **4,680**

(D) **4,780**

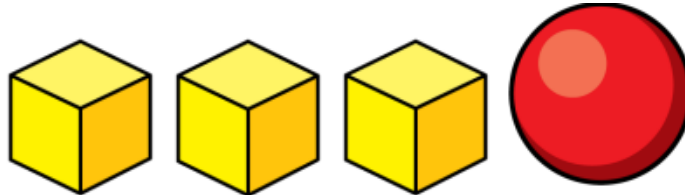
13.	<i>Which of these calculations has a different answer to the other three?</i>		
	(A) $\frac{5}{8}$ of 64	(B) $\frac{8}{15}$ of 75	
	(C) 5 % of 880	(D) 25 % of 80	

14.	<p>Amy earns £8.50 per hour by washing cars for her neighbours.</p> <p>This weekend, she spent three hours washing cars on Saturday, and 2 ½ hours on Sunday.</p> <p><i>How much money did she earn in total?</i></p>			
	(A) £40.25	(B) £42.50	(C) £46.75	(D) £55.25

15. Three identical cubes and sphere have a total mass of **156g**.

The sphere's mass is **12g more than the cube's mass**.

What is the mass of a single cube?



(A) **36g**

(B) **38g**

(C) **39g**

(D) **48g**

16. Alex is holding a card with a number on it. When he finds **one third** of his number and then **adds 6**, he makes **one more than the double** of his number.

What is his number?

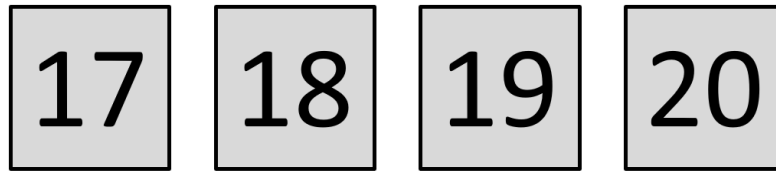
(A) **2**

(B) **3**

(C) **8**

(D) **10**

19. Rachel, Sam and Tegan have these four number cards:



Each child chooses one of the cards.

Rachel and **Sam**'s numbers add to a **square** number.

Sam and **Tegan**'s numbers add to a **prime** number.

Rachel and **Tegan**'s numbers add to a **multiple of 13**.

Which number card was not chosen by any of the children?

(A) **17**

(B) **18**

(C) **19**

(D) **20**

20. In the Mottingham Mega Maths Quiz there are **20** questions, and contestants score:
5 points for a correct answer;
- 1 point for an incorrect answer;
0 points if you “pass” on a question – meaning that you don’t answer it at all.

Jiyana scored **72** points in the quiz.

How many questions did Jiyana “pass” on?

(A) **0**

(B) **1**

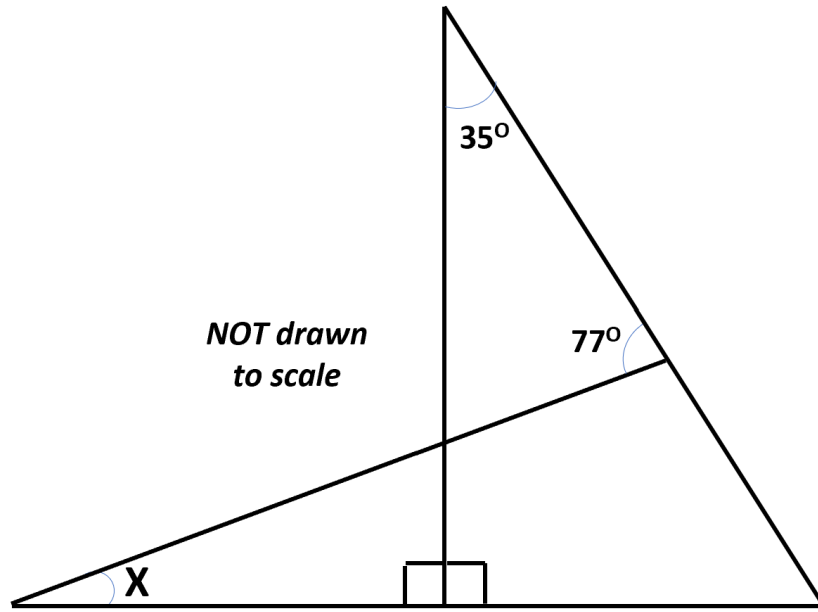
(C) **2**

(D) **3**

Section B : Problem-Solving Questions.

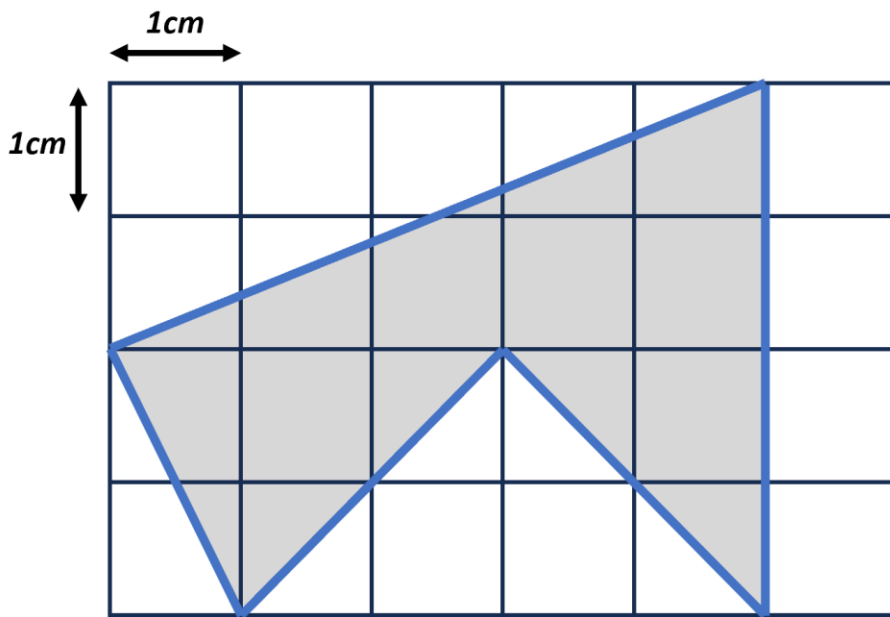
Each question has a space for you to show your workings and then a space for you to write your final answer.

21. *What is the size of angle X?*



Answer :

22. What is the area, in cm^2 , of the shaded area below?



*NOT drawn
to scale*

Answer :

23. Michael has **£28**.

Lola has **£76**.

They each give the same amount of money to a local charity.

Lola now has **four times as much money as Michael**.

How much money did they each give to the charity?



Answer : £ _____ *each*

24. Poppy takes the digit cards 1 to 6 and creates an addition using three fractions as shown below:

$$\frac{\square}{\square} + \frac{\square}{\square} + \frac{\square}{\square} = ?$$

She uses the odd digits (1, 3 and 5) as the numerators.

She uses the even digits (2, 4 and 6) as the denominators.

What is the largest total that Poppy can make? Give your answer as a fraction.

Answer :

25. The symbol \otimes represents the following function:

$$a \otimes b = (a \times b) - (a + b)$$

For example,

$$4 \otimes 3 = (4 \times 3) - (4 + 3) = 12 - 7 = 5$$

L and M are both two-digit numbers, and $L > M$.

Work out the values of L and M if:

$$L \otimes M = 155$$

Answer : $L =$ _____ $M =$ _____

END OF PAPER