Year 7 (11+) Entrance and Scholarship Examination

Mathematics

Name: ……………………………………………..

Time: 45 minutes

Instructions:

You may not use a calculator.
Section A contains 20 multiple-choice questions.
Answer each question by drawing a circle around the correct answer like this:

A	B	C	D
	(B)		

Use the space on the paper for working out.

Section B contains 3 problem-solving questions.
Attempt all questions and use the space on the paper to clearly show your working out.

SECTION A: MULTIPLE CHOICE QUESTIONS

1.	Work out the sum of 7, 67, 567, and 4567			
	A. **5208**	B. **5442**	C. **5342**	D. **5346**
	Working out:			

2.	Akshay has just paid 76p for an apple. How much would seven cost?			
	A. **£5.92**	B. **£5.36**	C. **£5.96**	D. **£5.32**
	Working out:			

3.	The train from London to Edinburgh takes 5 hours and 35 minutes. If the train arrives in Edinburgh at 2:50pm, what time did it leave London?			
	A. **6:25 pm**	B. **11:25 am**	C. **10:15am**	D. **9:15 am**
	Working out:			

4. The first term of a sequence is 1
The next term of the sequence is found by multiplying the previous term by two and then adding three.
What is the fourth term of the sequence?

$$1, \_ , \_ , \underline{?}$$

| A. 29 | B. 13 | C. 11 | D. 15 |

Working out:

5. Which of these quantities is the largest?

A.	B.	C.	D.
$2^2 \times 3 \times 5$	$2 \times 3^2 \times 5$	$2^4 \times 3$	2×3^3

Working out:

6. 360 students are asked how they travel to school.
- 35% say they travel to school by car.
- One sixth say they walk to school.
- The rest travel by bus.

How many students travel by bus?

| A. 174 | B. 184 | C. 165 | D. 210 |

Working out:

7. Uriel works at The Crusty Pi Cafe. He earns £8.25 per hour on Saturday and £9.70 per hour on Sunday.
Last weekend he worked for 2 hours on Saturday and 2½ hours on Sunday.
How much money did Uriel earn over the weekend?
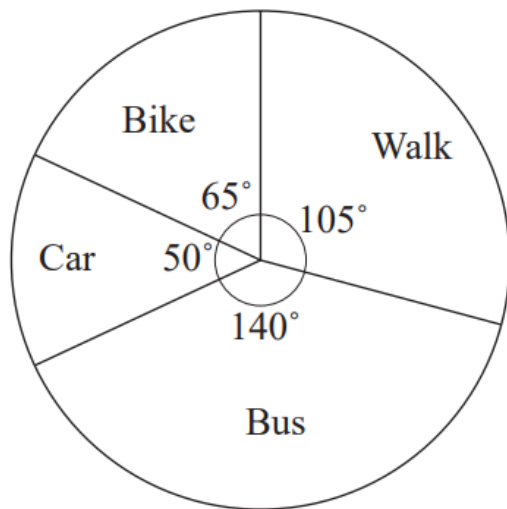
| A. **£40.75** | B. **£47.25** | C. **£49.75** | D. **£39.75** |

Working out:

8. This pie chart shows how a group of children travel to school

195 children go to school by bike.
How many children take the bus to school?
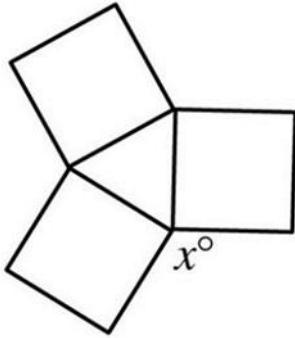
| A. **325** | B. **420** | C. **315** | D. **400** |

Working out:

9.	The diagram shows three squares of the same size. What is the value of x?		
A. 105	B. 120	C. 135	D. 150
Working out:			

10.	Six teams play in a netball competition. Each team plays every other team once. How many matches are there?		
	A. 21	B. 30	C. 15	D. 11
Working out:			

11.	Maryam takes four exams and finds that her average score is 64 marks. In her fifth and final exam, how many marks does she need to score to achieve an overall average of 70 marks?		
A. 80	B. 79	C. 85	D. 94
Working out:			

12. The chart below shows distances between some cities in England, using the best routes.
All distances are in miles.

London				
121	Birmingham			
204	89	Manchester		
216	101	34	Liverpool	
211	133	71	102	York

On Saturday, Onyx drives from London to York and then from York to Birmingham.
On Sunday they drive directly back from Birmingham to London.
How many miles did they drive over the weekend?

A. **432**	B. **453**	C. **465**	D. **476**

Working out:

13. Which of these calculations is incorrect?

A. **3 + 5 × 4 = 23**	B. **20 − 5 × 4 = 0**
C. **12 − 5 × 2 = 2**	D. **3 + 6 × 4 = 36**

Working out

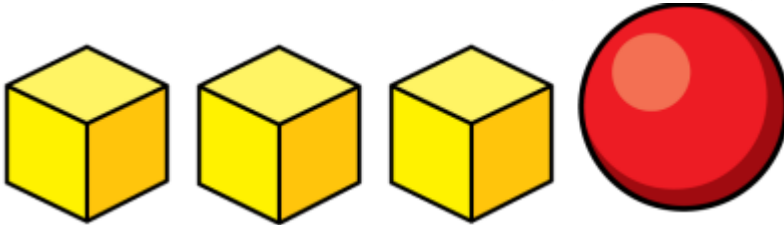| 14.	A film starts at 17:40 The film lasts 108 minutes. At what time does the film end?			
	A. **20:38**	B. **20:08**	C. **19:18**	D. **19:28**
	Working out:			

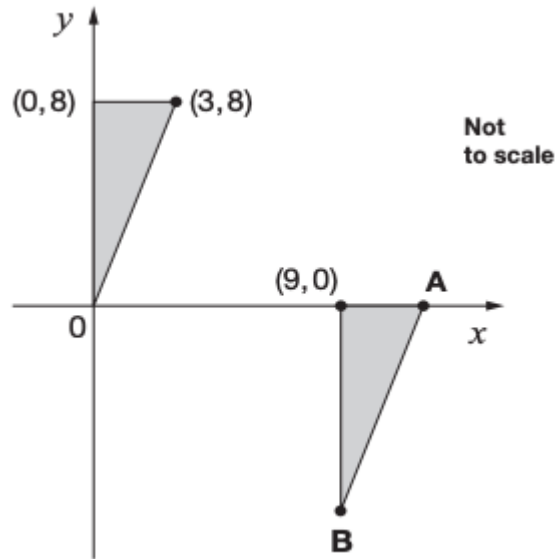| 15.	The mass of 3 identical cubes and 1 sphere is 133 g			
	The sphere is 45 g heavier than one of the cubes. What is the mass of one of the cubes?			
	A. 22	B. 34	C. 17	D. 16
	Working out:			

16. Here are two **identical** shaded triangles on coordinate axes.

Write the coordinates of the point **A**.

| A. **(9, -8)** | B. **(12, 0)** |
| C. **(9, 8)** | D. **(0, 12)** |

Working out:

17. The price of a washing machine increases by ten percent.

The cost of the washing machine is now £319. How much did the washing machine cost before the increase?

| A. **£280** | B. **£31.90** | C. **£290** | D. **£350.90** |

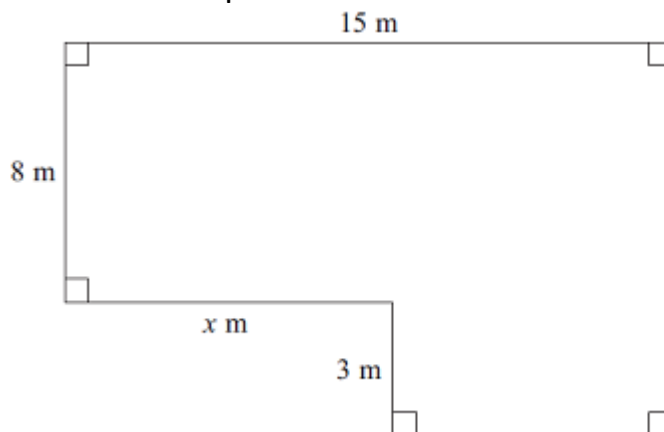*Working out:*

18. The diagram shows the plan of a floor.

15 m

8 m

x m

3 m

Diagram **NOT** accurately drawn

The area of the floor is 142.5m².
Work out the value of x

A. 6.5	B. 7.5	C. 5.5	D. 9.5

Working out:

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19. In a quiz there are 20 questions in a round.
A contestant scores:
+5 for each correct answer
-3 for each incorrect answer
-2 for each question left blank
Karina takes the quiz answering 15 correctly, 3 incorrectly and leaving 2 blanks.
What is her final score?

A. 75	B. 48	C. 66	D. 62

Working out:

20.	Reuben has £5 Tayla has £31 Tayla gives Reuben some money. Tayla now has 3 times as much money as Reuben. How much money did Tayla give Reuben?			
	A. **£3**	B. **£2**	C. **£1**	D. **£4**
	Working out:			

END OF SECTION A
MOVE STRAIGHT ONTO SECTION B

SECTION B: PROBLEM-SOLVING QUESTIONS

1.	Abs has a farm with pigs, ducks, and chickens. He observes that the ratio of pigs to ducks is 1:2 and the ratio of ducks to chickens is 4:7 If he has 12 ducks, how many animals in total are there on Abs' farm?

2.	*Withering Heights* is an extremely tall skyscraper in Bromley. The building is served by three lifts as follows. Lift A stops at every 4th floor Lift B stops at every 16th floor Lift C stops at every 12th floor. All three of the lifts stop in the lobby on the ground floor (also known as floor zero). Which is the next floor that is served by all three lifts?

3. Bijan reads a book.
- On Monday he reads 58 pages.
- On Tuesday he reads two fifths of the remaining pages.
- On Wednesday he reads the final 96 pages.

How many pages are in the book?