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# THE PERSE

## UPPER SCHOOL

### CAMBRIDGE

## Year 7 Entrance Exams

### Maths

## Specimen Paper 2

#### Instructions to candidates

**Time allowed: 45 minutes**

Instructions to candidates:

1. Show all working - you may receive marks for correct working even if your final answer is wrong. **Leave all fractions in their lowest form.**
2. Answer as many questions as you can, in any order.
3. Do not spend too long on any one question - if you get stuck, move on to the next.
4. Answers and working should be written on the exam paper in the spaces provided.
5. Calculating aids are **NOT** permitted.

1. Write in figures, the number : Sixty three thousand, four hundred and one.

Answer: \_\_\_\_\_

2. Circle all the numbers that can be exactly divided by 5

68 70 43 5 217

3. Find the missing number:

$$\begin{array}{|c|c|} \hline 1 & 9 \\ \hline \end{array} \times \square = 152$$

4. Calculate  $\frac{5}{8}$  of 4000

Answer: \_\_\_\_\_

5. Calculate each of the following:

(a)  $7921 + 846$

Answer: \_\_\_\_\_

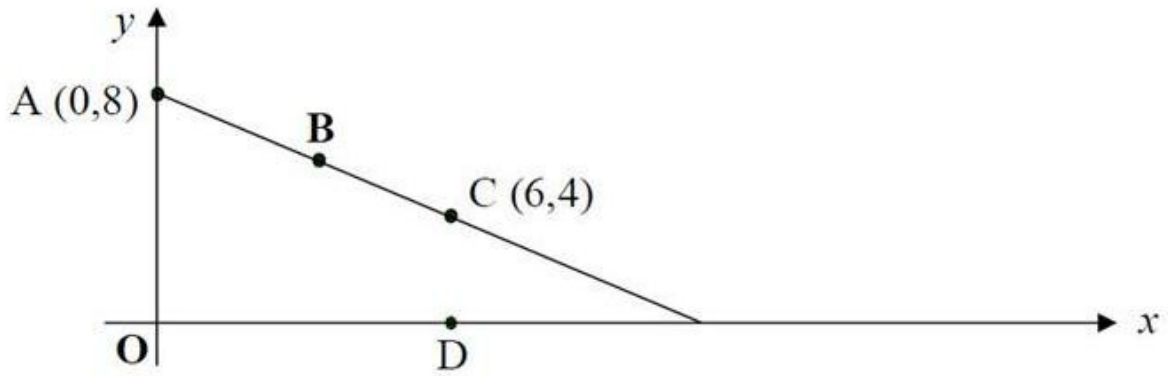
(b)  $2031 - 1357$

Answer: \_\_\_\_\_

(c)  $73 \times 8$

Answer: \_\_\_\_\_

6. Here is a straight-line graph.



The points A, B and C are equally spaced.

What are the co-ordinates of the point B?

Answer: B (\_\_\_\_\_, \_\_\_\_\_)

Point D is directly below point C as shown.

What are the co-ordinates of the point D?

Answer: D (\_\_\_\_\_, \_\_\_\_\_)

7. Which **one** of the following statements is false?

A.  $2 + 5 \times 4 = 22$

B.  $18 - 6 \times 3 = 0$

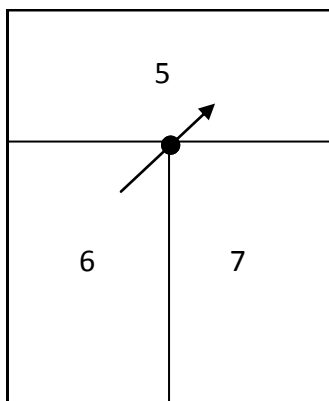
C.  $15 - 2 \times 7 = 1$

D.  $7 + 1 \times 3 = 24$

E.  $8 \times 5 - 7 = 33$

Answer: \_\_\_\_\_

8. What is the probability of scoring a 6 on this spinner?



Answer: \_\_\_\_\_

9. Choose from this set of numbers

8	9	10	11
12	13	14	15

(i) a square number

Answer (i) : \_\_\_\_\_

(ii) three multiples of 3.

Answer (ii) : \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

(iii) three factors of 60.

Answer (iii) : \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_

10. Look carefully at this number pattern.

$$1^2 + 3 = 4$$

$$2^2 + 5 = 9$$

$$3^2 + 7 = 16$$

$$4^2 + 9 = 25$$

Write the next two lines of the pattern

\_\_\_\_\_

\_\_\_\_\_

11. Calculate  $273 \div 7$

Answer: \_\_\_\_\_

12. In Moscow at noon it is  $4^{\circ}\text{C}$ . By midnight the temperature has dropped by  $10^{\circ}\text{C}$ . What is the temperature at midnight?

Answer: \_\_\_\_\_ $^{\circ}\text{C}$

13. In magic squares, the numbers in every row, column and the two diagonals add up to the same number. What is the **sum** of the **missing** numbers in the magic square below?

4	8	9
	7	

Answer: \_\_\_\_\_

14. For Ben's birthday he goes to the cinema. Tickets cost £3.85 for children and £5.50 for adults.

In his party there are 4 children and 2 adults.

(a) How much do the tickets cost?

Answer: \_\_\_\_\_

(b) Ben's Mum hands the cashier two £20 notes for the tickets. How much change does she receive?

Answer: \_\_\_\_\_

(c) The film starts at 15:55 and finishes at 5.35pm. How long does it last?

Answer: \_\_\_\_\_

15. Ben wants to buy 17 small bottles of drink for a party. A shop sells them at: 15p for 1 bottle; 28p for two bottles; 60p for a pack of 5 bottles. What is the smallest amount of money he needs to spend?  
[Give your answer in £s]

Answer: £ \_\_\_\_\_

16. This sequence of numbers goes up by 30 each time.

30, 60, 90, 120, 150, .....

The sequence continues.

Will the number 1330 be in the sequence?

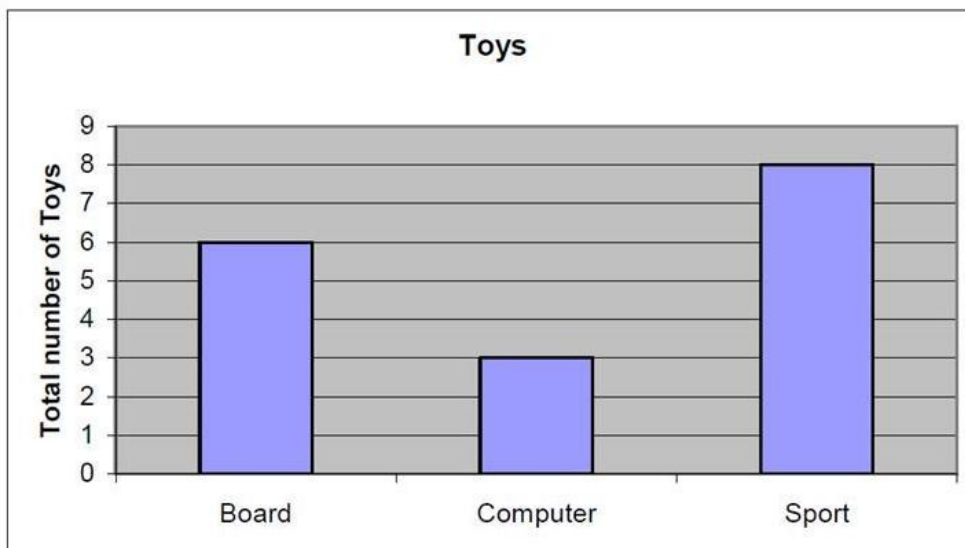
Answer: \_\_\_\_\_

Explain how you know:

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17. Here is a table of toys owned by 6 children:

<i>Child</i>	<i>Board games</i>	<i>Computer games</i>	<i>Sports equipment</i>
<b>Alan</b>	1	3	2
<b>Ben</b>	3	0	3
<b>Chris</b>	0	2	0
<b>David</b>	2	1	1
<b>Ed</b>	1	0	0
<b>Faizal</b>	0	0	4



Whose toys are not on the graph?

Answer: \_\_\_\_\_

18. The four numbers 8, 3, 9 and  have an average of 6.

What number goes in the box?

Answer: \_\_\_\_\_

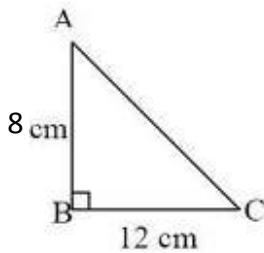
19. Fill in the spaces in the following table.

**Leave all fractions in their lowest form.**

The first line has been done for you.

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$		
		10%
	0.85	

20.



The diagram opposite (which is NOT drawn to scale) shows triangle ABC with angle B = 90°. AB = 8cm and BC = 12cm.

- (a) Complete the figure by drawing in two lines to make rectangle ABCD.
- (b) What is the distance around (perimeter of) the rectangle?

Answer: \_\_\_\_\_ cm

- (c) What is the area of triangle ABC?

Answer: \_\_\_\_\_ cm<sup>2</sup>



21. On the planet Zog, all numbers are written with the digits in reverse order. For example, forty-five is written as 54. Pluto, an inhabitant of Zog, was given the subtraction  $729 - 26$ . If no mistakes were made, what answer did Pluto write down?

Answer: \_\_\_\_\_

22. Which is bigger: 20% of 25 or 25% of 20?

(Marks will only be given for answers accompanied by appropriate working)

Answer: \_\_\_\_\_

23. The **same** number is missing from all three boxes.

Write the same missing number in each box.

$$\square \times \square \times \square = 512$$

24. Work out the following

(a)  $14\frac{2}{3} - 3\frac{5}{6}$  [Give your answer as a mixed number]

Answer (a): \_\_\_\_\_

(b)  $57.8 \times 0.1$

Answer (b): \_\_\_\_\_

25. What is the smallest whole number, above 120, which when divided by 53, leaves a remainder of two.

Answer: \_\_\_\_\_

**Now check through your work carefully!**