



THE PERSE
SCHOOL
CAMBRIDGE



Year 7 (11+) Entrance Assessments

Sample Maths Paper 1

Instructions to candidates

Time allowed: 45 minutes

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

1. Find the missing number:

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

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

Answer: _____

3. Calculate each of the following:

(a) $7921 + 846$

Answer: _____

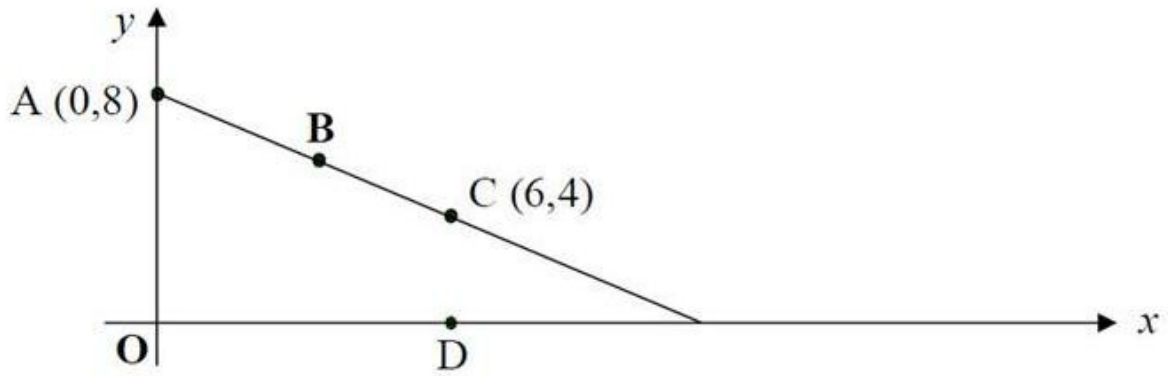
(b) $2031 - 1357$

Answer: _____

(c) 73×8

Answer: _____

4. Here is a straight-line graph.



The points A, B and C are equally spaced.

What are the co-ordinates of the point B?

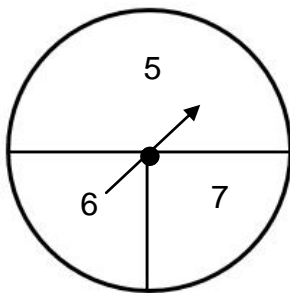
Answer: B (_____, _____)

Point D is directly below point C as shown.

What are the co-ordinates of the point D?

Answer: D (_____, _____)

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



Answer: _____

6. 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) : _____ , _____ , _____

7. 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

8. Calculate $273 \div 7$

Answer: _____

9. In Moscow at noon it is 4°C . By midnight the temperature has dropped by 10°C . What is the temperature at midnight?

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

10. For Ben's birthday he goes to the cinema. Tickets cost $\pounds 3.85$ for children and $\pounds 5.50$ 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 $\pounds 20$ 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: _____

11. 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: £ _____

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

30, 60, 90, 120, 150,

The sequence continues.

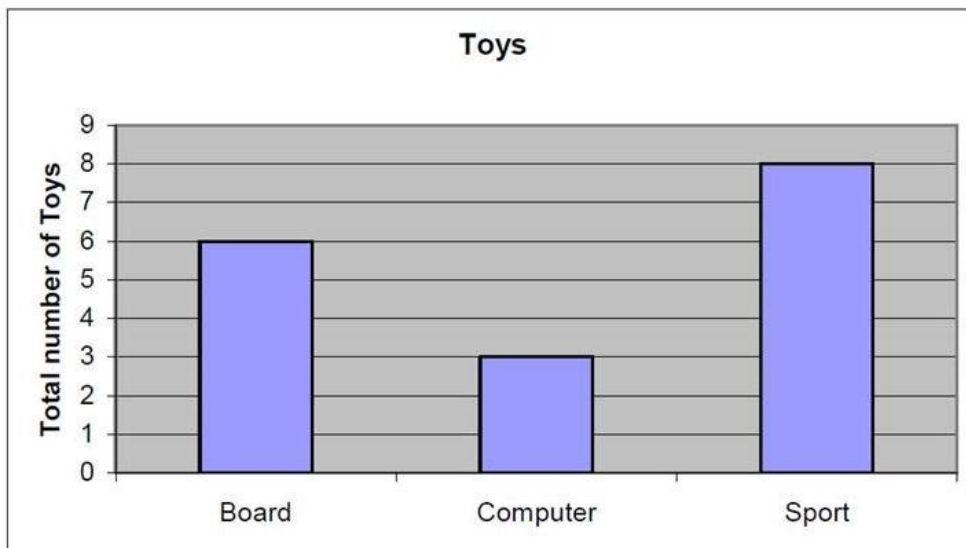
Will the number 1330 be in the sequence?

Answer: _____

Explain how you know:

13. 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>
Alan	1	3	2
Ben	3	0	3
Chris	0	2	0
David	2	1	1
Ed	1	0	0
Faizal	0	0	4



Whose toys are not on the graph?

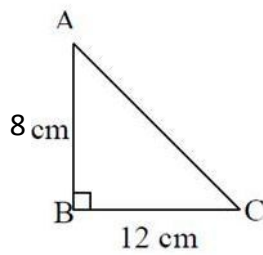
Answer: _____

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

What number goes in the box?

Answer: _____

15.



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: _____cm²

16. 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: _____

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

Write the same missing number in each box.

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

- 18 Work out the following

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

Answer (a): _____

(b) 57.8×0.1

Answer (b): _____

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

Answer: _____

20. Duncan and Jess have created a mathematical rule where 'the block' (\blacksquare) of two numbers is the remainder when their sum is divided by 7.

For example, $3 \blacksquare 8 = 4$ because $3 + 8 = 11$ and the remainder when you divide 11 by 7 is 4.

and $3 \blacksquare 2 = 5$ because $3 + 2 = 5$ and the remainder when you divide 5 by 7 is 5.

- a. Calculate $11 \blacksquare 9$

Answer: _____

- b. Calculate $1 \blacksquare 11 \blacksquare 111$

Answer: _____

- c. Find the least possible positive whole number a , **greater than 1**, such that $a \blacksquare a = 2$

Answer: _____

- d. Find the least possible positive whole number value b such that $22 \blacksquare b \blacksquare 50 = 1$

Answer: _____

Now check through your work carefully!