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THE PERSE

UPPER SCHOOL

CAMBRIDGE

Year 7 Entrance Exams

Maths

Specimen Paper 4

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. Fill in the missing digits to complete the following multiplication:

2005 = | 5 | x | | | |

2. Calculate each of the following:

(a) $23\frac{1}{3} + 7\frac{3}{4}$

Answer: _____

(b) $4\frac{1}{3} \times 7$

Answer: _____

3. What is the mass of 16 tins, each of mass 178g?

Give your answer in **kilograms**.

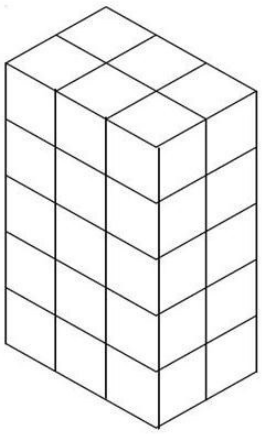
Answer: _____kg

4. Which **ONE** of the following numbers is NOT divisible by 3?

A 18171 **B** 44481 **C** 38501 **D** 57060

Answer: _____

5. A model tower block is made from centimetre cubes as shown below:



It is 5cm by 3cm by 2cm

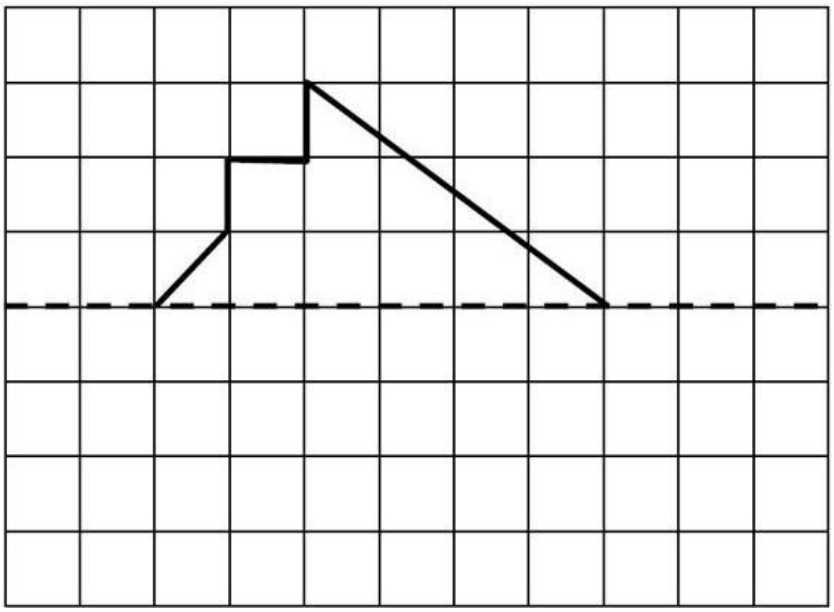
(a) What is the volume of this tower?

Answer (a): _____cm^3

(b) Another tower is built with 72 centimetre cubes. What could be the length, height and width of this tower?

Answer (b): length: _____; height: _____; width: _____

6. Complete the following diagram so that the dotted line becomes an axis of symmetry.



7. Calculate

(a) 18 - (9 - 7)

Answer: (a) _____

(b) (18 - 9) - 7

Answer: (b) _____

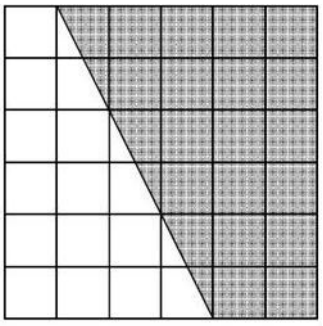
(c) (80 ÷ 20) ÷ 4

Answer: (c) _____

(d) 80 ÷ (20 ÷ 4)

Answer: (d) _____

8. What fraction of the shape shown has been shaded?



Answer: _____

9. Calculate

(a) 37 x 9

Answer: (a) _____

(b) 3408 - 2159

Answer: (b) _____

(c) 87.32 + 19.8

Answer: (c) _____

(d) 5.4 x 0.8

Answer: (d) _____

10. What is the smaller angle between the hands of a clock at five o'clock?

Answer: _____degrees

11. Four of these numbers can make two pairs so that each pair adds up to 5871. Which number is the odd one out?

A 1917 **B** 2743 **C** 3008 **D** 3954 **E** 2863

Answer: _____

12. Write down any **two** prime numbers between 45 and 60.

Answer: _____ , _____

13. Fill in the spaces in the following table: (the first one has been done for you)

[fractions should be left in their lowest terms]

Fraction	**Decimal**	**Percentage**
½	0.5	50%
¾		
		20%
	0.45	

14. Cans of coke cost £1.16 each. I buy 4 cans and pay with a £10 note. How much change do I receive?

Answer: £_____

15.

7	15	20
14	2	36
5	12	19

Stuart chooses a number from the grid shown above. He is equally likely to choose any of these numbers. What is the probability that the number he chooses is:

(a) even Answer: (a) _____

(b) a multiple of 5 Answer: (b) _____

(c) a prime number Answer: (c) _____

(d) not a multiple of 3 Answer: (d) _____

16. $6764 \div 89 = 76$

Use this result to **write down** the answers to each of the following:

(a) $6764 \div 76$

Answer: (a) _____

(b) $7.6 \div 0.89$

Answer: (b) _____

17. A cookbook gives the time to cook a turkey as “25 minutes per kilogram plus an additional 30 minutes”

(a) How long will it take to cook at 4kg turkey?

Answer: (a) _____hours _____mins

(b) If I wish to have the 4kg turkey ready to eat at 1.15pm what is the latest time I should start cooking it?

Answer: (b) _____

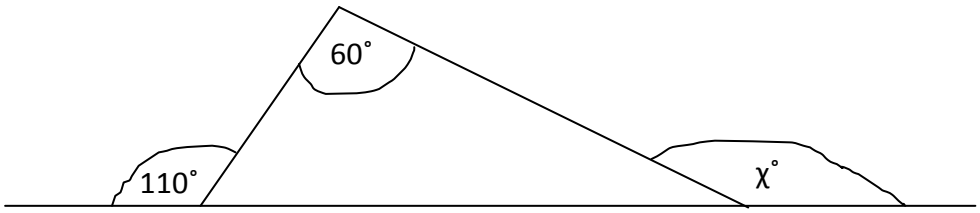
(c) I calculate on another occasion that the turkey I have bought will take 3 hours to cook. How heavy is this turkey?

Answer: (c) _____kg

18. After the first 5 weeks of the holiday, Stuart has earned an average of £11 per week. In his sixth week he earns £23. What is his new average weekly wage?

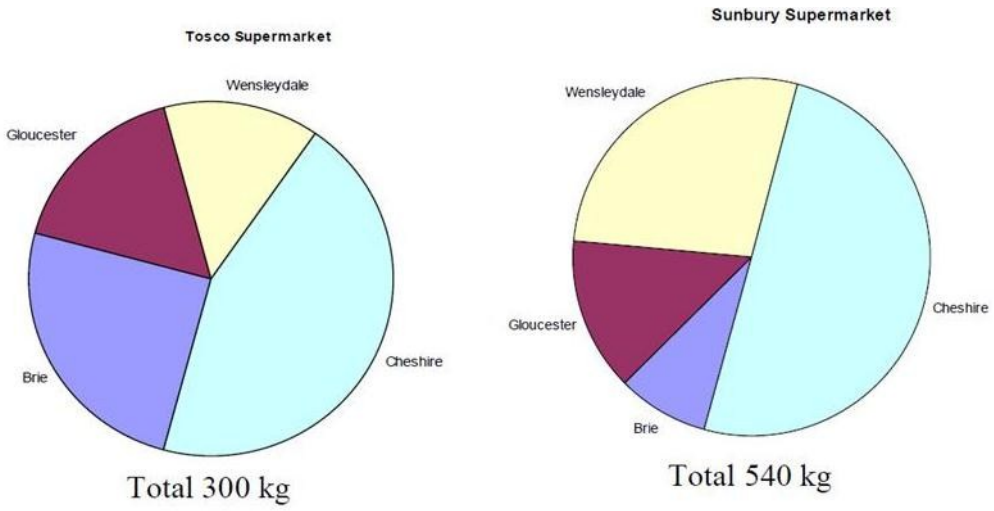
Answer: £_____

19. Find the value of χ in the diagram below



Answer: χ = _____

20. Tosco and Sunbury are two supermarket chains. They each sell a variety of difference cheeses. The amounts of cheese sold in 1 week, by each supermarket, are shown in the pie charts below.



(a) **Estimate** the amount of Brie sold by Tosco in 1 week.

Answer: (a) _____kg

(b) Stuart says that Tosco sold more Gloucester cheese, in one week, that Sunbury. Explain why Stuart may be wrong.

Answer: (b) _____

_____

21. On the planet Zorgon, the natives have a special sort of arithmetic using the symbol ☼

3 ☼ 4 means add 3 and 4 and then add on the product of 3 and 4, so

3 ☼ 4 = 3 + 4 + (3 x 4) = 19

And similarly, 2 ☼ 6 = 2 +6 + (2 x 6) = 20

Find the values of

(a) 5 ☼ 7

Answer: (a) _____

(b) 0 ☼ 9

Answer: (b) _____

(c) If χ ☼ 2 + 23 find the value of χ

Answer: (c) χ= _____

Now check through your work carefully!