1. Work out 10,000 - 4769

Answer 5231

(Total 1 mark)

---

2. Calculate 111111 ÷ 7

Answer 15873

(Total 1 mark)

---

3. What is 87 x 96

Answer 8352

(Total 2 marks)

---

4. Jack runs the 100 metres in a time of 15.47 seconds. Emily runs the same distance in a time of 13.762 seconds. **Estimate** the difference in their times by rounding each number to the nearest whole number and subtracting.

15 - 14

Answer ..... 1 ..... seconds

(Total 2 marks)

---

5. The prime factorisation of 60 is 2 x 2 x 3 x 5.

What is the prime factorisation of 56?

Answer ..... 7 x 2 x 2 x 2 .....

(Total 2 marks)

---

6. Amelia earns £330 but has to pay rent of £X. Write an expression for how much money she has left after paying the rent.

Answer £..... 330 − X .....

(Total 1 mark)

---

7. There are 45 scouts in a troop. The scouts are divided into patrols. There must be at least 6 patrols, and each patrol must have the same number of scouts. What is the **largest** number of scouts that each patrol could contain?

Answer ..... 5 .....

(Total 2 marks)

---

8. A café sold 40 sandwiches on Monday. 45% of the sandwiches were vegetarian. How many vegetarian sandwiches did the café sell?

Answer ..... 18 .....

(Total 2 marks)

---

9. A Fones4U store has 96 phones in stock. Three-eighths of them are Android phones. How many Android phones does it have in stock?

Answer ..... 36 .....

(Total 2 marks)

---

10. At an England v Australia rugby match, there were 76,432 spectators. 8,695 of these spectators were supporting Australia, and the rest were supporting England. How many spectators were supporting England?

Answer 67 737

(Total 2 marks)

---

11. Chigwell School buys a badge for each student who plays for one of the school teams. 193 students receive a badge, and each badge costs £6. How much does the school have to pay in total?

Answer £ 1158

(Total 2 marks)

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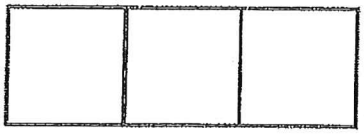
12. If the area of each square is 9 cm^2, what is the outer perimeter of the whole shape? The diagram is not drawn to scale.



Answer 24 cm

(Total 2 marks)

---

13. Four rabbits weigh the same as three cats, and two cats weigh the same as four guinea pigs. How many rabbits weigh the same as six guinea pigs?

Answer 4

(Total 2 marks)

---

14. Liam started with the number 2 and counted up in 3s. He got the numbers 2, 5, 8, 11, ... Louise started with the number 3 and counted up in 2s. She got the numbers 3, 5, 7, 9, ... What is the difference between Liam's 50th number and Louise's 50th number?

149 − 101

Answer 48

(Total 3 marks)

---

15. I think of two different numbers between 100 and 200 inclusive. The highest common factor of my numbers is the same as the lowest common multiple of 8 and 10. What two numbers could I have thought of?

Any two of 120
160
200

Answer .....

(Total 3 marks)

---

16. What number needs to go in the box to make the calculation correct?

$26 \times 37 = \square + 258$

Answer ..... 704 .....

(Total 2 marks)

---

17. In the sum below, the letters A, B, C and D each represent a different digit. What digit does each letter represent?

$$\begin{array}{cccc} & A & A & A \\ + & & 6 & 6 \\ \hline B & C & 6 & D \end{array}$$

A = ... 9 ..... B = ... 1 ..... C = ... 0 ..... D = ... 5 .....

(Total 4 marks)

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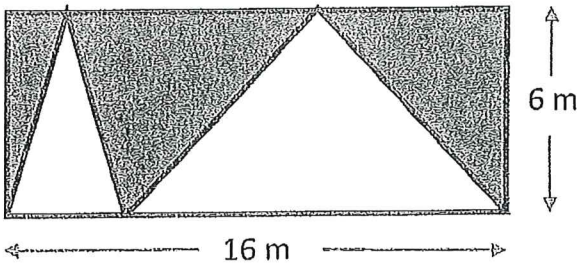
18. What is the area of the shaded part of the rectangle below?



Answer ..... $48 m^2$ .....

(Total 3 marks)

---

19. Olly thinks of a positive whole number. When he divides 60 by his number, the answer is also a whole number. How many different numbers could Olly have thought of? 1, 2, 3, 4, 5, 6
10, 12, 15, 20, 30, 60

Answer ..... Twelve .....

(Total 3 marks)

---

20. I went to watch a three-hour concert but the music was so awful that I only stayed for 15% of it. How many minutes did I stay at the concert for?

Answer ..... 27 .....minutes

(Total 2 marks)

---

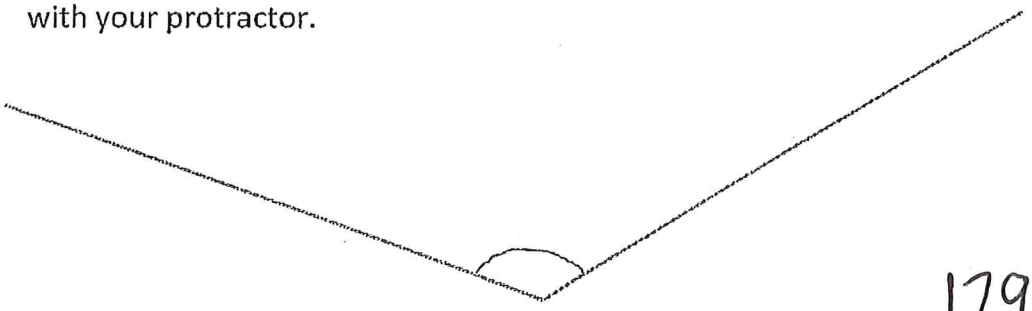
21. Guy is half as old as Gerald, who is three times older than Gill. If the sum of all of their ages is 99, what are their ages?

Answer Gill ..... 18 ..... Guy ..... 27 ..... Gerald ..... 54 .....

(Total 3 marks)

---

22. Estimate the angle drawn below and then also measure it accurately with your protractor.



Answer estimate ..... Answer accurate ..... 129° .....

(Total 2 marks)

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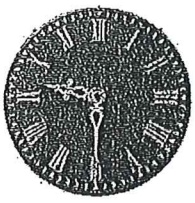
23. Calculate the angle between the hands of a clock at 9.30. (Remember that when the minute hand is at half past, the hour hand has moved halfway between the 9 and the 10).



Answer ..... 105° .....

(Total 2 marks)

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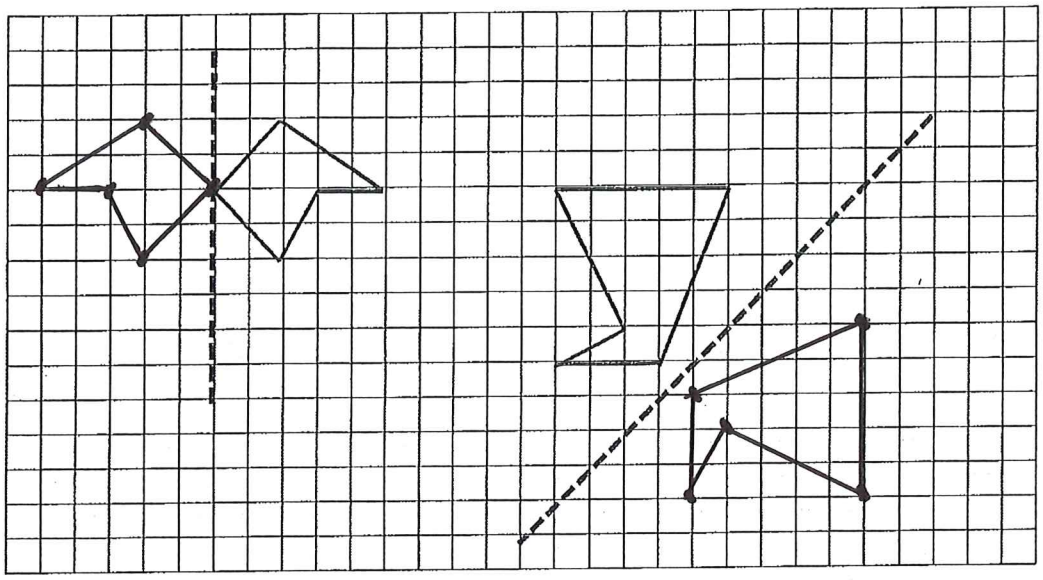
24. Reflect the shapes in the grids below so that the marked lines are lines of symmetry (mirror lines).



(Total 3 marks)

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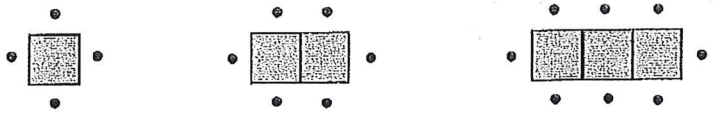
25. Below is a sequence of squares and dots



(a) How many dots will surround the diagram with a row of 20 squares?

Answer 42

(b) How many squares are in the diagram which has 148 dots?

Answer 73

(Total 3 marks)

26. In a class there are 9 boys and 13 girls. 10 students have brown hair. 15 students do not wear glasses.

a) What is the largest possible number of boys who wear glasses?

Answer 7

b) What is the smallest possible number of girls who do not wear glasses?

Answer 6

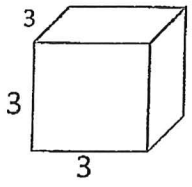
c) What is the largest number of boys with brown hair, who wear glasses?

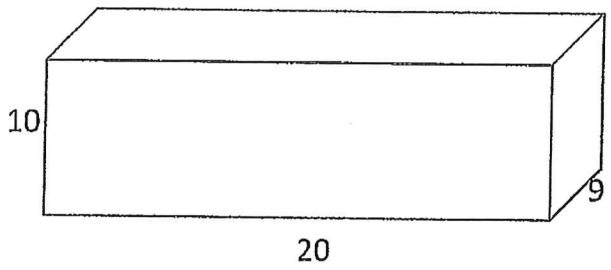
Answer 7

(Total 3 marks)

---

27. Below are diagrams of a small cube and a larger cuboid. How many of the small cubes can be fully fitted into the larger cuboid? All measurements are in centimetres.





(Not to scale)

Answer 54

(Total 3 marks)

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28. Body Mass Index (BMI) = $\frac{\text{Mass in kg}}{(\text{Height in m})^2}$

a) Find the mass of Patrick who has a height of 1.5 m and a BMI of 20.

Answer 45 kg

b) Find the BMI of Bess who is 1.2 m tall and has a mass of 36 kg.

Answer 25

(Total 4 marks)

---

29. a) Find the two prime numbers with a sum of 100 and the largest difference.

Answer 3 and 97

b) Find the two prime numbers with a sum of 100 and the smallest difference.

Answer 47 and 53

(Total 4 marks)

---

30. Starting from 100 we subtract 99 then add 98, then subtract 97 and then add 96 and we carry on in this way through all of the whole numbers from 100 downwards until we reach the number 1 (as shown below). Work out the final answer. (There is a quick way !).

100 – 99 + 98 – 97 + 96 – 95 + ... and so on ..... + 2 – 1.

Answer 50

(Total 2 marks)

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31. Half of the pupils in a school are boys; one third of the boys play soccer; one quarter of the boy soccer players get soccer colours; one fifth of those who win soccer colours are boys in form 8CC. There are 10 boys with soccer colours in 8CC. How many pupils are there in the school?

Answer 1200

(Total 2 marks)

---

32. Find the smallest amount of money that cannot be paid using three or fewer British coins.

Answer 18p

(Total 2 marks)

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33. In this question, S(n) is the sum of all the positive factors of the positive integer n, including 1 and n.

For example S(6) = 1 + 2 + 3 + 6 = 12.

a) Find S(169).

Answer 183

b) Find S(19^2).

Answer 381

(Total 4 marks)

END

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