

FIRST NAME SURNAME

SCHOOL DATE



SMOOTH**MATHS**

11 PLUS EXAMINATION

MATHEMATICS

SAMPLE PAPER 1

Paper ID: SM-11MATH-A5

Please read the following before you begin

- Please attempt all questions.
- Keep all your work neatly within the answer spaces provided.
- Show all your working out clearly on the paper.
- Calculators are not allowed.

TOTAL MARKS: 100

TIME ALLOWED: 1 HOUR

STUDENT SCORE:/100



Sample paper produced independently by SmoothMaths, inspired by the question style and structure often seen in leading independent school and 11+ entrance exams.
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Section A

1. $54 \times 18 + 72$

Answer:

2. $4056 - 289$

Answer:

3. 137×54

Answer:

4. $6552 \div 18$

Answer:

5. If the cylinder has a meniscus at 32.5 ml, what is the reading?

Answer:

6. Find the number $8,000 - 137$

Answer:

7. Given a net of a cube, which square will be opposite the red square when the net is folded?

Answer:

8. a) $4 \times 9 + 8$

Answer:

b) $36 \div 6 \div 3$

Answer:

c) $18 - 7 \times 3$

Answer:

9. Name the following shapes:

A shape with 4 equal sides and angles.

A shape with 3 sides of unequal length.

A shape with 4 sides, opposite sides equal, and 90-degree angles.

Answers:

10. :

	Monday	Tuesday	Wednesday	Thursday	Friday
Maxine	23	24	31	26	19
Ava	14	17	11	16	16
Ellie	12	15	18	12	16
Sara	19	25	41	22	23

From the table showing how many minutes four children took to get to school:

a) Who took the longest to get to school on Friday?

Answer:

b) What is the average time for Maxine?

Answer:

c) What is the range of the times on Wednesday?

Answer:

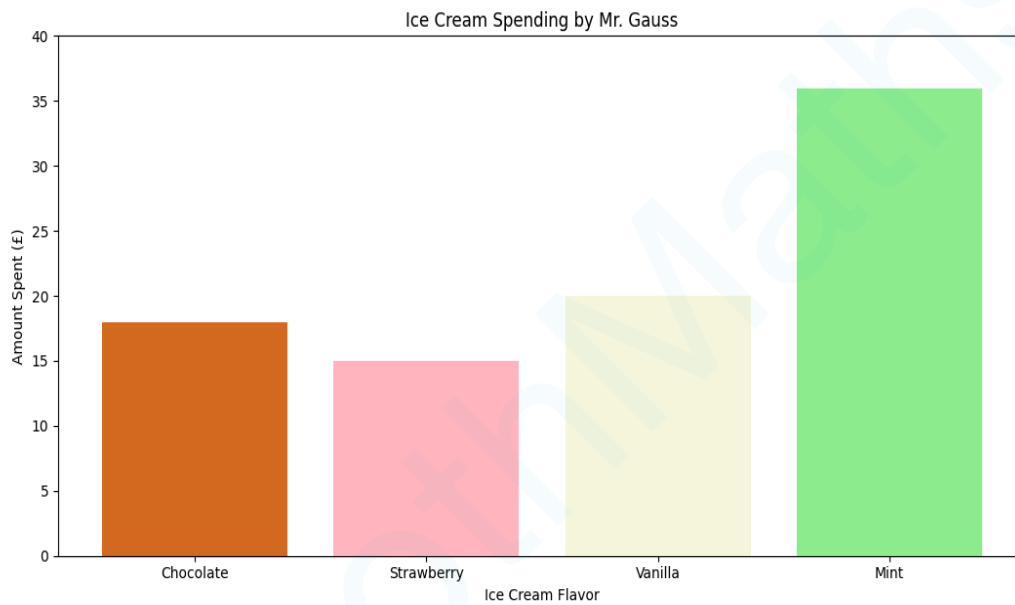
11. a) Round 13.67 to the nearest whole number.

Answer:

b) Round 34.987 to 2 decimal places.

Answer:

12. Mr. Gauss spent £18 on Chocolate ice cream. How much was spent on Mint ice cream if the bar for Mint is twice the height of the bar for Chocolate?



Answer:

13. The sequence is: 1,3,6,10,... What are the next two terms?

Answer:

14. How many vertices does a cube have?

Answer:

15. Which is the best estimate for the length of a pencil: 10 cm, 0.1 m, 100 mm, 5 cm?

Answer:

16. The temperature in New York is 8 degrees higher than in Chicago. If the temperature in Chicago is 4°C , what is the temperature in New York?

Answer:

17. Sarah has more than 5 apples but fewer than 8 apples. Tom has more than 6 apples but fewer than 9 apples. What are all possible totals of apples they could have together?

Answer:

18. Emily saves £25 in January, £10 in February, and £15 in March. What is her average monthly saving?

Answer:

21. What is $\frac{1}{3}$ of $\frac{2}{5}$ of 45?

Answer:

22. Order these numbers from smallest to largest:
0.58, 0.62, 0.508, 5.8

Answer:

23. Use given information to solve:

a) 83×103

b) $9468 \div 103$

c) $9468 \div 41$

d) If each bus can seat 83 people, how many buses are needed for 9468 people?

Answers:

Section B

1. Work out the number from the following clues:
 - a. It is a whole number.
 - b. It is less than 150.
 - c. It is a prime number.
 - d. The sum of its digits is 11.
 - e. It is 5 more than a multiple of 6.

Answer:

2. Solve the system of equations:

a. $P+L+T=22$

b. $T+L+W=33$

c. $P+L+W=28$

What is the value of $P+L+T+W$?

Answer:

3. A rectangle is 8 cm longer than it is wide. Its perimeter is 40 cm. Find its area.

Answer:

4. In a new planet's currency system:

One "flib" is worth 6 "plongs"

One "plong" is worth 2 "bips"

Convert the following:

a. 3 flibs = _____ plongs

b. 20 bips = _____ flibs

c. 15 bips = _____ flibs

(a) 3 flibs to plongs:

(b) 20 bips to flibs:

(c) 15 bips to flibs:

Answers:

a)

b)

c)

5. A crate has dimensions of 1.5 m x 2.5 m x 3 m. Each box has dimensions of 35 cm by 25 cm by 20 cm. What is the largest number of boxes that can fit in the crate?

(Note: You cannot cut or rearrange the boxes.)

Answer:

6. Miss Lovelace writes the following pattern:

$$8 \times 8 = 64$$

$$7 \times 9 = 63 = 64 - 1$$

$$6 \times 10 = 60 = 64 - 4$$

$$5 \times 11 = 55 = 64 - 9$$

- a. Write the next line in the pattern.

- b. Miss Lovelace writes a new pattern:

$$20 \times 20 = 400$$

$$19 \times 21 = 399 = 400 - 1$$

$$18 \times 22 = 396 = 400 - 4$$

- c. Complete the next line:

$$17 \times \dots = \dots = 400 -$$

Answers:

7. Bob, Tina, and Laura have 30 marbles between them. Bob says he has 12 marbles. Tina says Laura has 5 more marbles than Bob. Laura says Tina has more marbles than her. Exactly one of them is lying. Who is lying, and how do you know?

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Answer:

8. The numbers in the following shapes follow a rule:
Multiply the number in the circle by 2, multiply the number in the square by 3, then subtract the two results.

Example:

$$(3 \times 2) - (4 \times 3) = 6 - 12 = -6$$

Solve for the missing values:

Circle	Square	Results
4	5	?
7	2	?
9	6	?
6	3	?

9. A theme park is planning to reduce the ticket price by 25%. The director predicts the number of visitors will increase by 50%.
- a. In 2018, the park made £500 from ticket sales. Tickets were £8. How much will the park make in 2019 if the price is reduced?

Answer:

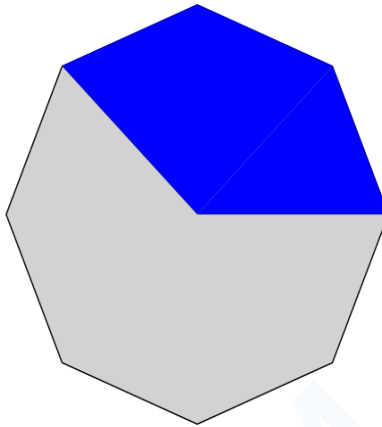
b. In reality, the park made £560 in 2019. How many more visitors came to the park in 2019 compared to 2018?

Answer:

10. The function machine has the following rule: Multiply the input by 4, then subtract 5.
Complete the table:

Input	Output
1	
3	
5	
8	

11. The diagram shows a regular octagon.
What fraction of the octagon is shaded?



Answer: