SASMO 2025 MOCK TESTS
Grade: 7
Time allowed: 90 minutes
TEST 3

INSTRUCTIONS. Please read all the instructions below carefully.

a) Please DO NOT OPEN the contest link until the Proctor has given permission to start.

b) There are a total of 25 questions, which are divided into three parts. In the first part, choose only ONE correct answer among the 5 choices and darken its corresponding circle in your answer sheet. In the second part and third part, write the final answer for each question and darken their corresponding circles in your answer sheet.

c) Write your answers in the respective blank.

- When the answer is a 1-digit number, type "000" for the tens, the hundreds and the thousands place. Example: if the answer is 7, then type 0007.
- When the answer is a 2-digit number, type "00" for the hundreds place and the thousands place. Example: if the answer is 23, then type 0023.
- When the answer is a 3-digit number, type "0" for the thousands place. Example: if the answer is 191, then type 0191.
- When the answer is a 4-digit number, type as it is. Example: if the answer is 6419, then type 6419.

d) Dictionaries are allowed, but calculators are not.

e) Figures may not be drawn to scale.

Remark. Counting numbers are whole numbers except 0, i.e. $1, 2, 3, 4, 5, \ldots$

GOOD LUCK!

LIVEWORKSHEETS

A SECTION A (CORRECT ANSWER = 2 MARKS; NO ANSWER = 0; INCORRECT ANSWER = MINUS 1 MARKS)

Question 1. Find the value of

$$112 \times 112 - 111 \times 113$$

(A) 0. (B) 1. (C) 2. (D) 10. (E) 100.

Question 2. There are 50 students in classroom A. Two fifths of the students learn piano. One fifth of those who learn piano wear spectacles. How many students in classroom A learn piano but do not wear spectacles?

(A) 4. (B) 6. (C) 16.
(D) 24. (E) None of the above.

Question 3. Isabella is planning to learn English. She plans to learn 1 new word on every Monday, 2 new words on every Tuesday, 3 new words on every Wednesday and so on up to 7 new words every Sunday. If Isabella starts learning the first word on Monday, on which day of the week will Isabella learn the 90^{th} word?

(A) Saturday. (B) Sunday. (C) Monday. (D) Tuesday. (E) Wednesday.

Question 4. Find the next number in the sequence below

$$2, 12, 30, 56, 90, \ldots$$

(A) 100. (B) 116. (C) 124.
(D) 132. (E) None of the above.

Question 5. The sum of 5 consecutive numbers is equal to 625. What is the largest of these consecutive numbers?

(A) 125. (B) 127. (C) 129.
(D) 130. (E) None of the above.

Question 6. The point totals that Mark scored in five basketball games were $x, 11, 13, y, 12$. How many different possible medians are there for his five point totals?

(A) 1. (B) 2. (C) 3. (D) 4. (E) 5.

Question 7. How many 2-digit numbers are divisible by 6 and 4?

(A) 4. (B) 5. (C) 6. (D) 8. (E) 9.

Question 8. If 10 workers take 2 days to dig a well of 5 meters deep, how long will 4 workers take to dig a well of 10 meters deep? (Assume that all workers dig at the same rate)

(A) 2. (B) 4. (C) 8.
(D) 10. (E) None of the above.

Question 9. Find the number X such that the following statement is true:

$$2017 - 7 \times 2 \div X \times 5 = 267$$

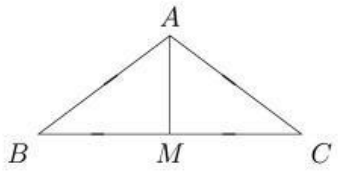
(A) 25. (B) 5. (C) 0.25. (D) 0.04. (E) 0.0016.

LIVEWORKSHEETS

Question 10. The breadth of a rectangle is increased by 50%. What should be the percentage decrease of length so that the area remains unchanged? (Round your answer to the nearest whole number)

(A) 67%. (B) 66%. (C) 50%. (D) 34%. (E) 33%.

Question 11. In the diagram, $\triangle ABC$ is isosceles. M is on BC so that $BM = MC$.



If the perimeter of $\triangle ABC$ is 64 and the perimeter of $\triangle ABM$ is 40, what is the length of AM?

(A) 4. (B) 10. (C) 12. (D) 8. (E) 9.

Question 12. A list of five numbers repeats to form the pattern:

$$5, 6, 7, 8, 9, 5, 6, 7, 8, 9, 5, 6, 7, 8, 9, \ldots$$

What is the 221^{st} number in the pattern?

(A) 5. (B) 6. (C) 7. (D) 8. (E) 9.

Question 13. An ant begins its path at A, travels only right or down, and remains on the line segments shown. The number of different paths from A to C that pass through B is

(A) 2. (B) 3. (C) 4. (D) 5. (E) 6.

Question 14. Ken, Ronald and Wendy are guessing the food inside the bag of their mother.
Ken: "It is not a hotdog. It is a burger!"
Ronald: "It is not a burger. It is a pie."
Wendy: "It is not a pie. It is not fries."
If one of them said two correct sentences, one said 1 correct and 1 wrong sentence, and the other one said two wrong sentences. What is the food inside the bag?

(A) Fries. (B) Burger. (C) Pie.
(D) Hotdog. (E) Not enough information.

Question 15. To *encode* a message, James first replaces each letter with its corresponding number, where $A = 1$, $B = 2$, ..., $Y = 25$, and $Z = 26$. Next, James multiplies each number by 3 and then subtracts 5, and continues the process a total of n times. For example, when $n = 2$, the letter D is encoded to the number 16.
If James encoded a four letter message to the four numbers 367, 205, 853, 1339, what is the value of n that he used?

(A) 2. (B) 3. (C) 4. (D) 5. (E) 6.

B SECTION B: CORRECT ANSWER = 4 MARKS; INCORRECT OR NO ANSWER = 0

Question 16. There are some 3-digit numbers that satisfy the following criteria:

a) The sum of the digits is 25.

b) The product of the digits is 567.

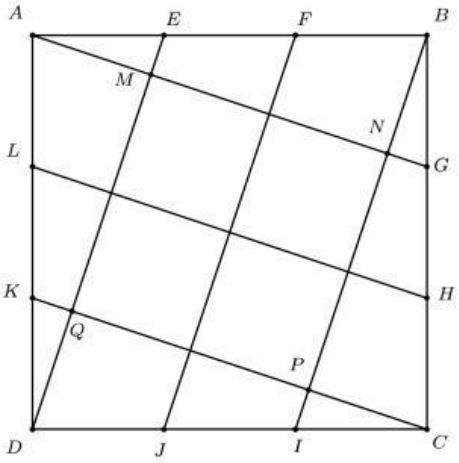
What is the greatest 3-digit number that satisfies the criteria above?

LIVEWORKSHEETS

Question 17. The diagram below shows square $ABCD$ such that

$$AE = EF = FB = BG = GH = HC = CI = IJ = JD = DK = KL = LA = 20cm$$

Find the area of the square $MNPQ$ in cm^2.



Question 18. How many pairs of positive whole numbers have a greatest common factor of 4 and a lowest common multiple of 4620?

Question 19. A large number is written with a one follows by many zeroes (1000...000). When 1 is subtracted from this number, the sum of the digits in the result is 252. How many zeroes are in the original number?

Question 20. Jamaican top runners Usain, Yohan and Nickel were in the 200-metre competition. When Usain reached the finished line, Yohan was behind Usain by 20 metres, and Nickel was behind Yohan by 36 metres. Suppose all of them maintained their respective speeds. How far was Nickel from the finish line when Yohan completed the race? Express your answer in metres.

Question 21. In the sequence below, some numbers are missing. Each number is the sum of its two preceding numbers. What is the value of X?

$$X, _, _, _, 18, _, _, 76, \ldots$$

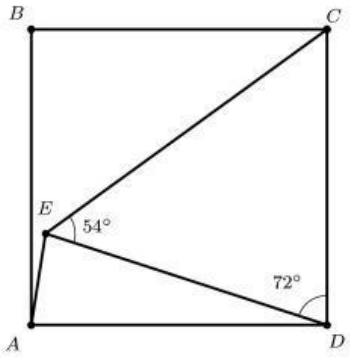
Question 22. Find the following product

$$\left(\frac{1}{2}-\frac{1}{100}\right)\times\left(\frac{1}{3}-\frac{1}{99}\right)\times\left(\frac{1}{4}-\frac{1}{98}\right)\times\left(\frac{1}{5}-\frac{1}{97}\right)\times\cdots\times\left(\frac{1}{99}-\frac{1}{3}\right)\times\left(\frac{1}{100}-\frac{1}{2}\right)$$

Question 23. There are only apples and oranges in a basket. The ratio of apples to oranges is 4:3. The ratio of fresh fruits to rotten fruits is 13:2. Given that 45% of the rotten fruits are oranges, what is the percentage of oranges that are rotten? (For example, if your answer is 12%, shade 0012 in the Answer Entry Sheet)

Question 24. In the diagram below, $ABCD$ is a square, $\angle CDE = 72°$ and $\angle CED = 54°$. Find the angle $\angle EAD$.

LIVEWORKSHEETS



Question 25. In the following, all the different letters stand for different digits.

$$\begin{array}{cccc} & \mathrm{B} & \mathrm{E} & \mathrm{E} \\ \times & & & 4 \\ \hline \mathrm{S} & \mathrm{E} & \mathrm{E} & \mathrm{D} \end{array}$$

What is the value of the 4-digit number SEED?

THE END

LIVEWORKSHEETS