PUMA MATH CONTEST

MATH CONTEST – Model Paper

Grade 6

Duration: 2 Hours.

Student's Index Number: _____

Instructions

1. Do not open the contest booklet until you are told to do so.
2. Electronic devices (Calculators, mobile phone ..) are not permitted
3. Please use pen to write the answer.
4. You may use rulers, compasses and paper for rough work.
5. When your supervisor instructs you to start, you will have 2 hours of working time.
6. Scoring: Total 100 points; three are three parts, Part A. is worth 45 Marks, Part B, is worth 30 Marks and Part C, is worth 25 marks.

Grade 6 Math Contest -Total of 100 points

Part A: Each correct answer is worth 1 point [Total of 45 points]

1. Add each of the following:

    a. $2000 + 200 + 10 + 9 + 0.1 \quad =$

    b. $800000 + 8000 + 800 + 90 + 0.1 + 0.009 + 0.0001 \quad =$

    c. $31030 + 4310 + 107 + 10 + 0.9 + 0.09 + 0.008 \quad =$

    d. $0.006 + 0.003 + 0.08 + 0.9 + 10 + 104 + 1000 \quad =$

    e. $201023 + 201 + 17 + 9 + 0.11 + 0.009 + 0.1001 =$

2. Write each number in expanded form.

    a. $793 =$

    b. $749.009 =$

    c. $90347.123 =$

    d. $4074790 =$

    e. $78934.0145 =$

3. Write each of the following as a decimal.

    a. Ninety-one and five hundred seventy-eight thousandths

    b. nine hundred sixty thousandths

    c. eight and three hundred three thousandths

    d. seven and ninety-seven hundredths

    e. six hundred twenty-six and three tenths

4. Calculate the following. Round your answer to two decimal places where necessary.

    a. $34.9 \div 6 =$

    b. $456.34 \div 8 =$

    c. $67.7 \times 9 =$

    d. $876.9 \times 3 =$

    e. $36325.98 \div 8 =$

5. Complete each blank.

    a. $16 + 8 - 2 =$ _____

    b. $16 + 8 \div 2 =$ _____

    c. $72 \times 108 \div 9 =$ _____

    d. $169 - 88 \div 11 =$ _____

    e. $16 \times 8 \div 2^2 \times 5 =$ _____

6. The numbers below represent the math marks of Mr.'s top five students.

    98, 89, 96, 87, 95

    a. What is the range of the marks?

    b. What is the average of the marks?

    c. What is the median of the marks?

    d. What is the mode of the marks?

    e. What is the value of the expression 5x - 7 when $x = 2$?

7. Add or Subtract: Leave the answer in simplified form.

    a. $\dfrac{2}{5} + \dfrac{1}{2} =$

    b. $\dfrac{1}{2} - \dfrac{3}{7} =$

c. $\dfrac{2}{5} + \dfrac{1}{2} + \dfrac{3}{7} =$

d. $\dfrac{2}{5} + \dfrac{1}{2} - \dfrac{3}{7} =$

e. $\dfrac{2}{5} + \dfrac{3}{2} - \dfrac{3}{7} =$

8. Write each of the following as a percent.

    a. $0.189 =$ _____

    b. $3 : 4 =$ _____

    c. $0.34 =$ _____

    d. $\dfrac{2}{40} =$ _____

    e. $\dfrac{3}{60} =$ _____

9. What is the greatest common factor of 108, 360, and 240?

10. What is the least common multiplier of 18, 24, and 36?

11. Jon Browner is the world's heaviest man in mid 1900s had a weight of 635 kg. The weight of his brother was 341 kg. About how much heavier was Jon Browner compare to his brother? Use estimation to solve the problem.

12. Tony asks Hera to pick a number from 1 to 20. What is theoretical probability that Tony will correctly guess the number?

13. A farmer harvested 14,000 kg of almonds from an 8 km^2 farmland. How many kilograms of almond the farmer expected to harvest from a 30 km^2 farmland?

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Part B: Each correct answer is worth 3 points [Total of 30 points]
STEPS MUST BE SHOWN TO Each QUESTION.

14. 28 students from Ms.K's class went on lego competition. The number of students who finished behind Sunita was twice as large as the number of students who were more successful than her. In which place did Sunita finish?

15. A company makes 15 blue cars for every 13 white cars it makes. If the company makes 65 white cars in one day, how many blue cars will it make?

16. If 50% of a number is 20, what is 75% of the number?

17. The original price of a new bicycle is $138.00. The bicycle is marked down 15%. The store also had an additional off for "scratch for extra sale" on Wednesdays. Cyma went to store on a Wednesday and was lucky enough to get a 20% off on the sale price. What is the new price of the bicycle?

18. One morning, the temperature was 5° Celsius. By noon, the temperature rose 20° Celsius and then dropped 8° Celsius by evening. What was the evening temperature?

19. Sarah types 115 words in 5 minutes and Sutha types 174 words in 8 minutes. Who types faster? Show your work.

20. Ian is training to be a fast typist. He increases the number words per minute he types each week by the following number pattern. The number of words he types each week is shown in the table below.

week	Number of words
1	17
2	22
3	27
4	32
5	37

Sean predicts that Ian will type 67 words during the 13th week. Use words, symbols, or numbers to explain whether Sean's prediction is correct or not.

21. What is the value of $\mathbf{2013 \div (2 + 0 + 0 + 7) - 2 \times 0 \times 0 \times 7}$?

22. If a chips machine produces 116 chips in two minutes, how many would it produce in 10 seconds?

23. A spinner has 24 equal-sized sections. The sections are labeled 1 through 24. What is the probability that Ken will spin a multiple of 5 on his second spin? Explain how you know.
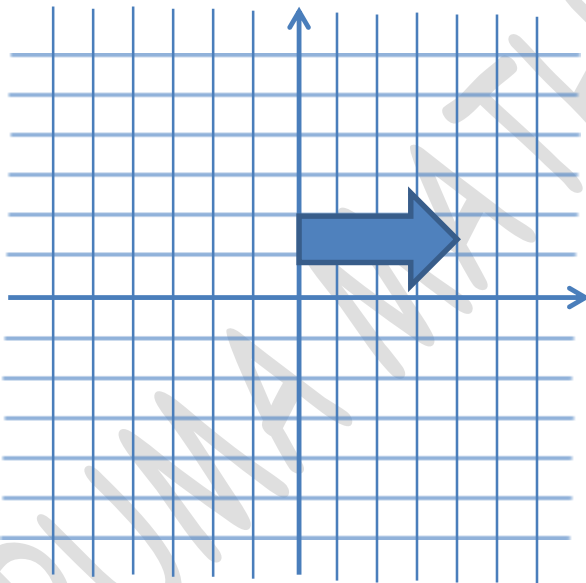
Part C: Each correct answer is worth 5 points [Total of 25 points]

24. The volume of a cube is 64 cm³. What is the surface area of the cube? Show your steps to get full marks.

25. The shape on the grid below goes through the following 3 transformations in order:

    • rotation of 90° about the origin

    • reflection across the y-axis

    • translation 5 units left

    Draw the final shape.

26. A quadrilateral has an area of 25 cm^2 and a perimeter of 20 cm. What is that shape. Draw the shape and show the necessary measurements.

27. A pool has a volume of 100 L. Sobana starts filling the empty pool with water at a rate of 10 L/min. The pool springs a leak after 2 minutes and water leaks out at 1L/min. Beginning from the time when Sobana starts filling the empty pool, how long does it take until the pool is completely full?

28. Plot the points A(106, 107), B(107, 106), C(-106, -107), D(106, -107), and E(107, -106) on the co-ordinate grid below. Then from your drawing decide which of the segments is horizontal?