



PUMA MATH CONTEST

MATH CONTEST – Model Paper

Grade 7

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.

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Grade 7 Math Contest
Year 2014 Sample Paper Total of 100 points

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

1. Evaluate each expression:

a. $10 + 16 \div 4 - 6 \times 2 =$

b. $(3 \times 5) \div 3 + 1 =$

c. $(5 - 2)^2 + 7 - 10 =$

d. $10 + (2^3 - 2) - 1 =$

e. $25 - (16 - 12)^2 =$

2. Divide or Multiply.

a. $33.3 \div 0.3 =$

b. $1.02 \times 0.02 =$

c. $14.4 \div 0.04 =$

d. $2.7 \div 3 =$

e. $2.5 \times 2.5 =$

3. Calculate the mean, median and mode for each set of data.

a. 1, 2, 3, 1, 8, 2, 5, 2

b. 2.1, 1.2, 3.3, 2.1, 1.2, 1.2

4. Calculate the following.

- a. $(-5) - (-5) =$
b. $(+15) - (+5) + (-12) =$
c. $(-2) - (-3) - (-4) =$
d. $(1) - (-9) + (-2) =$
e. $(+1) - (+5) + (-3) =$

5. Solve each equation.

- a. $x - 12 = 13$
b. $\frac{x}{2} + 1 = 4$
c. $2x - 5 = 13$
d. $3x - 4 = -16$
e. $2x - 3 = x + 9$

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

- a. $2\frac{2}{5} + \frac{1}{2} =$
b. $3\frac{1}{2} - 1\frac{3}{7} =$
c. $1\frac{2}{5} + 2\frac{1}{2} + 5\frac{3}{7} =$

d. $\frac{7}{5} + \frac{9}{2} - \frac{45}{7} =$

e. $\frac{12}{5} + 2 - \frac{13}{7} =$

7. Write each of the following as a percent and a fraction.

a. $0.12 =$ _____, _____

b. $3 : 4 =$ _____, _____

c. $0.34 =$ _____, _____

d. $\frac{2}{5} =$ _____, _____

e. $\frac{3}{60} =$ _____, _____

8. Express each as unit rate or ratio.

- a. A car travels 240 km in 4 hours.
- b. Peter is paid \$25 for 2 hours of work.
- c. Sutha runs 1500 m in 5 min.
- d. Ms. G's class has 8 boys and 12 girls.

9. Write the simplest fraction that is equivalent to the decimal number 0.475.

10. Kayla started out with $\frac{1}{7}$ of a box of honeydew cereal and she ate $\frac{1}{10}$ more. What fraction of the box remains?

11. A dime is 0.15 cm thick. How thick is a roll of dimes worth \$1?

12. What is the surface area of a cube?

13. Two fractions are equally spaced between $\frac{1}{6}$ and $\frac{1}{2}$. What is the largest fraction of the two fractions?

Part B: Each correct answer is worth 3 points [Total of 30 points]

STEPS MUST BE SHOWN TO Each QUESTION.

14. A train travels at a rate of 120 km per 30 minutes. At this rate, how far the train will travel in 2 hours?

15. Does $(-3) - (-5)$ give the same result as $(-5) - (-3)$? Explain using counters for integer subtraction.

16. Ariel swims every 4th day and Dawn swims every 2nd day. After how many days will they swim together?

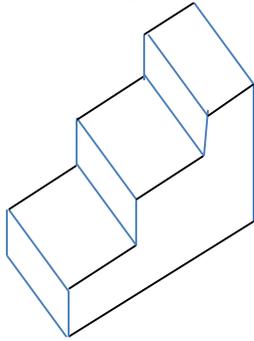
17. Claire is having a garage sale. Every hour she marks down toys by \$0.25. After the 10th hour, the toys cost \$5.50. What was the starting price of the toys?

18. A jar is filled with red, orange and yellow jelly beans. The probability of randomly selecting a red jelly bean from this jar is 0.2, and the probability of randomly selecting an orange jelly bean from this jar is 0.5. What is the probability of randomly selecting a yellow jelly bean from this jar? Express your answer as a decimal to the nearest tenth.

19. One integer is 5 more than another integer. The sum of these two integers is -13. Find the integers.

20. A dollar was changed into 16 coins consisting of just nickels and dimes. How many coins of each kind were in the change?

20. Draw the top, front, and right-side views of the structure.



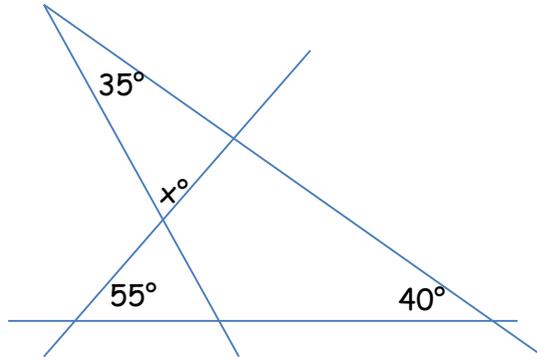
21. The volume of a rectangular box is 150 m^3 . The height of the box is tripled. The other dimensions stay the same. What is the volume now?

22. Mike completed 40% of his 40 hours of required community service to get his high school diploma. How many more hours does he need to complete?

Part C: Each correct answer is worth 5 points [Total of 25 points]

23. Jaskirat solves 9 math problems on day 1. Each day after that, he solves three problems more than the day before. At this rate Jaskirat thinks that he can solve 75 math problems in day 10. His sister, Jasmine a "math hazy", says it will take 23 days. Who is right? Explain your thinking.

24. In the diagram below, calculate the angle x° .



25. A wall is 5 m long, 1 m high and 19 cm thick. There are 100 blocks in a cubic meter. How many blocks are in the wall?

26. Jane sells T-shirts at a pavement store. She is paid \$50 per day plus \$1.50 for each T-Shirt she sells.

- What part of salary never changes no matter how many T-Shirts she sells?
- Write an algebraic equation that describes Jane's salary. Use the letter 's' for salary and 'n' for the number of T-shirts.
- What is her salary in one day if she sold 15 T-shirts?

27. Triangle ABC has coordinates A (-1, 3), B (-2, 0), and C (1, -1).

a. Draw triangle ABC on the grid below.

b. Rotate triangle ABC 90 clockwise about B and write the coordinates of the new triangle.

