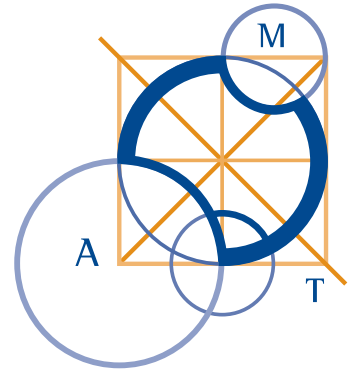


AUSTRALIAN MATHEMATICS COMPETITION

AN ACTIVITY OF THE AUSTRALIAN MATHEMATICS TRUST



THURSDAY 6 AUGUST 2009

MIDDLE PRIMARY DIVISION COMPETITION PAPER

AUSTRALIAN SCHOOL YEARS 3 AND 4

TIME ALLOWED: 60 MINUTES

INSTRUCTIONS AND INFORMATION

GENERAL

1. Do not open the booklet until told to do so by your teacher.
2. You may use any teaching aids normally available in your classroom, such as MAB blocks, counters, currency, calculators, play money etc. You are allowed to work on scrap paper and teachers may explain the meaning of words in the paper.
3. Diagrams are NOT drawn to scale. They are intended only as aids.
4. There are 25 multiple-choice questions, each with 5 possible answers given and 5 questions that require a whole number answer between 0 and 999. The questions generally get harder as you work through the paper. There is no penalty for an incorrect response.
5. This is a competition not a test; do not expect to answer all questions. You are only competing against your own year in your own State or Region so different years doing the same paper are not compared.
6. Read the instructions on the **Answer Sheet** carefully. Ensure your name, school name and school year are filled in. It is your responsibility that the Answer Sheet is correctly coded.
7. When your teacher gives the signal, begin working on the problems.

THE ANSWER SHEET

1. Use only lead pencil.
2. Record your answers on the reverse of the Answer Sheet (not on the question paper) by FULLY colouring the circle matching your answer.
3. Your Answer Sheet will be read by a machine. The machine will see all markings even if they are in the wrong places, so please be careful not to doodle or write anything extra on the Answer Sheet. If you want to change an answer or remove any marks, use a plastic eraser and be sure to remove all marks and smudges.

INTEGRITY OF THE COMPETITION

The AMC reserves the right to re-examine students before deciding whether to grant official status to their score.

Middle Primary Division

Questions 1 to 10, 3 marks each

1. The value of $1000 + 200 + 4$ is

- (A) 10 204 (B) 1204 (C) 1 000 204 (D) 10 002 004 (E) 124
-

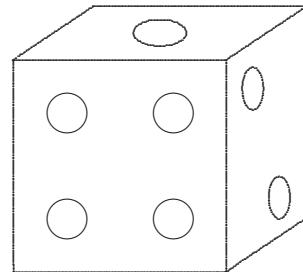
2. For the number below, what number will be obtained if I double the thousands digit and halve the tens digit?

$\boxed{4} \boxed{2} \boxed{2} \boxed{4}$

- (A) 2224 (B) 8214 (C) 4414 (D) 8244 (E) 2214
-

3. A normal dice is shown in the diagram. What is the total of the numbers on the faces **not** shown?

- (A) 7 (B) 11 (C) 13
(D) 14 (E) 15



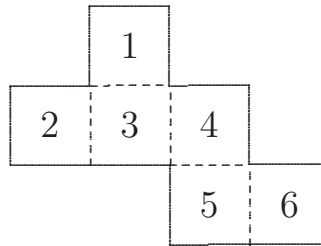
4. To what number do I add 11 to get 28?

- (A) 39 (B) 17 (C) 27 (D) 7 (E) 19
-

5. Which of the following is closest to 1000 seconds?

- (A) 1 hour (B) 1 day (C) 45 minutes
(D) 30 minutes (E) 15 minutes
-

6. The net below is folded to form a cube.



On this cube, what number is on the face opposite the number 6?

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

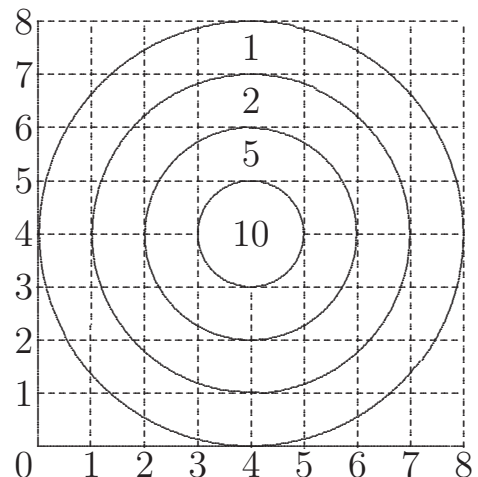
7. Which of the following stories could match this number sentence?

$$14 - 7 + 9 = 16$$

- (A) Simon had 14 lollies, he ate 9 of them and then his sister gave him 9 more. He then had 16 lollies.
 (B) James had 18 lollies, he gave 14 to his sister, he ate 9 and had 7 left.
 (C) Lan had 14 lollies, she ate 7 of them, then was given 9 more by her mother. She now has 16 lollies.
 (D) Karen ate 14 lollies, took 7 from her sister, ate 9 more and had 16 left.
 (E) Helen had 14 lollies, was given 7 more by her brother and 9 more by her sister and now has 16 lollies.
-

8. Some friends are playing darts. Their darts land at the points (6,7), (2,3), (7,6), (3,5) and (1,6). Which dart scored the highest?

- (A) the dart at (6,7)
 (B) the dart at (2,3)
 (C) the dart at (7,6)
 (D) the dart at (3,5)
 (E) the dart at (1,6)



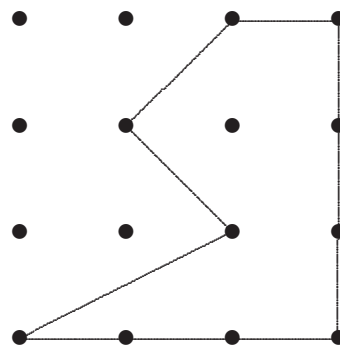
MP 3

9. A string of beads has a repeating pattern of blue, red, red, green, yellow and yellow. Starting from green, what is the colour of the 18th bead?

- (A) red (B) green (C) blue (D) yellow (E) orange
-

10. The grid is a 1-centimetre grid. What is the area, in square centimetres, of the figure shown?

- (A) $3\frac{1}{2}$ (B) 4 (C) $4\frac{1}{2}$
(D) 5 (E) $5\frac{1}{2}$

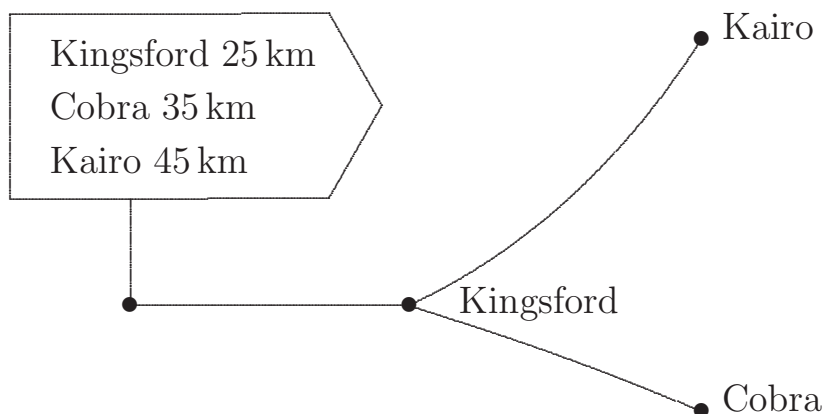


Questions 11 to 20, 4 marks each

11. I read 3 chapters of my book each night except Saturday and Sunday when I read 4 chapters each night. How many chapters do I read in a week?

- (A) 8 (B) 15 (C) 21 (D) 23 (E) 29
-

12. Given the roads and distances marked below, how far is it by road, in kilometres, from Cobra to Kairo?



- (A) 30 (B) 45 (C) 60 (D) 71 (E) 80
-

13. When a barrel is one-quarter full it contains 6 litres. How many litres does it hold when it is two-thirds full?

- (A) 16 (B) 18 (C) 20 (D) 21 (E) 24
-

14. Jye takes four steps to walk the same distance that Fred covers in three steps. If each of Fred's steps is 50 cm, what distance, in metres, does Jye walk if he takes 24 steps?

- (A) 3 (B) 6 (C) 9 (D) 12 (E) 16
-

15. Using 5c, 10c, 20c and 50c coins, in how many different ways can you make up 50c?



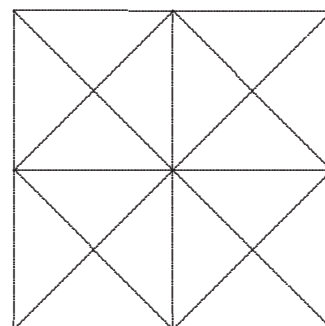
- (A) 4 (B) 6 (C) 8 (D) 10 (E) 13
-

16. Five teams play each other once in a basketball competition. How many games were played in total?

- (A) 10 (B) 12 (C) 14 (D) 20 (E) 28
-

17. How many triangles are there in this figure?

- (A) 20 (B) 32 (C) 36
(D) 40 (E) 44



18. The recipe for making pancakes is:

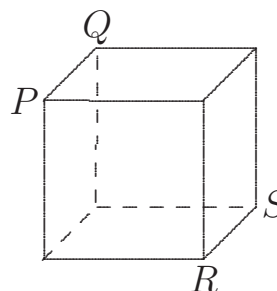
- 1 egg
- 1 cup (250 mL) milk
- 1 cup flour
- 1 teaspoon sugar
- pinch of salt

This will be enough mixture to cook 12 small pancakes.

How much milk would you need to make 42 small pancakes?

- (A) 3 cups (B) $3\frac{1}{2}$ cups (C) 765 mL
- (D) 1050 mL (E) $5\frac{1}{4}$ cups

19. The picture shows a cube with some corners labelled. It is cut into two pieces by making a straight cut from PQ to RS . The two pieces formed are:



- (A) both triangular prisms
(B) both triangular pyramids
(C) both square prisms
(D) both square pyramids
(E) one square pyramid and one triangular pyramid

20. I live in a small street with 6 houses. One day 35 letters were delivered in my street and I received more letters than anyone else. What is the smallest number of letters I could have received?

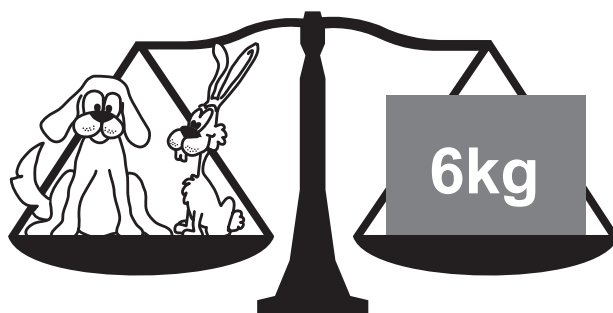
- (A) 1 (B) 3 (C) 5 (D) 7 (E) 8

Questions 21 to 25, 5 marks each

21. The ages of the three children in the Jones family add up to 14. If their ages are multiplied together, the result is 70. What is the age of the eldest child?

- (A) 5 (B) 7 (C) 8 (D) 10 (E) 14

- 25.** Our family's cat and dog together weigh 7 kg. Our dog and rabbit together weigh 6 kg. Our cat and rabbit together weigh 5 kg.



In kilograms, how much does our cat weigh?

- (A) 2 (B) 2.5 (C) 3 (D) 3.5 (E) 4

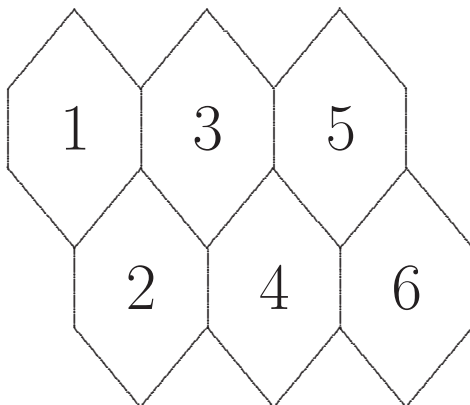
For questions 26 to 30, shade the answer as a whole number from 0 to 999 in the space provided on the answer sheet.

Question 26 is 6 marks, question 27 is 7 marks, question 28 is 8 marks, question 29 is 9 marks and question 30 is 10 marks.

- 26.** Sally has a pile of jelly beans. Her brother eats half of them, then her sister eats a quarter of the remaining jelly beans. Her father finds the leftover jelly beans and eats one-third of them leaving Sally with 6 jelly beans. How many jelly beans did Sally have to begin with?

- 27.** Ms Davey has a box of marbles in her storeroom. She can share her marbles equally between 2, 3, 4, 5 or 6 children with no marbles leftover. What is the smallest number of marbles that could be in Ms Davey's box?
-

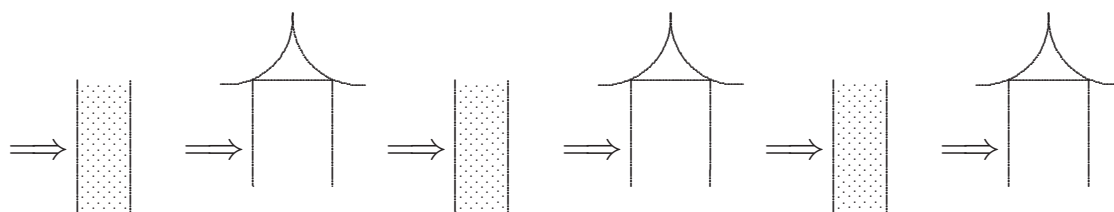
- 28.** In the diagram, 6 equal polygons touch as shown, and each of them contains a number from 1 to 6.



How many ways are there to move from polygon 1 to polygon 6 if you can move only to a touching polygon labelled with a larger number?

- 29.** In a television quiz show, Rachel wins 250 points for a correct answer but loses 150 points for an incorrect answer. Rachel answered 15 questions and obtained 2150 points. How many questions did she get correct?
-

- 30.** Each day Merlin places the same number of flowers (at least one) at three temples. To get to any temple from another he crosses a magic river once. He also has to cross a magic river once to get to the first temple. Each time he crosses a magic river, the number of flowers he has doubles. He has no flowers left when he leaves the third temple. What is the minimum number of flowers he must have at the start?



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