Hunter Region Independent Schools

NEW SOUTH WALES DEPARTMENT OF EDUCATION AND TRAINING

Diocese of Maitland-Newcastle Catholic Schools Office

NEWCASTLE PERMANENT

Here for good.

THE NEWCASTLE PERMANENT

PRIMARY MATHEMATICS COMPETITION

Wednesday, 2 September, 2009

Time allowed: 45 minutes

Instructions:

1. When asked by your teacher, open this booklet and check to see that there are 35 questions.
2. Calculators, rulers, geometrical instruments or other aids are **NOT** permitted.
3. **NO** working is to be shown on your answer sheet. Working paper will be supplied by your teacher if required.
4. All answers **MUST** be recorded in **PENCIL** on your answer sheet. (a **B** pencil or softer)
5. When your teacher gives the signal, begin working on the problems. You have 45 minutes working time.
6. Marks will **NOT** be deducted for incorrect answers.
7. Make sure that you complete the sections on the answer sheet for your name, sex, year, five digit competition code and school name.

SECTION A

Each correct answer in this section is worth 2 marks.

1. Fifteen thousand and five is:

   (A) 15 005 (B) 15 055 (C) 15 505 (D) 15 555

2. The next number in this pattern 2, 9, 16, 23, 30, ___ is:

   (A) 36 (B) 37 (C) 38 (D) 39

3. 2835 + 6247 = ____ The answer is:

   (A) 8072 (B) 8082 (C) 9072 (D) 9082

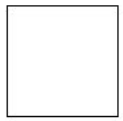
4. When counting up in tens from 690, the next two numbers are:

   (A) 691, 692 (B) 700, 701 (C) 700, 710 (D) 800, 900

5. The correct numeral for $(3 \times 10^3) + (5 \times 10) + 2$ is:

   (A) 352 (B) 3052 (C) 3502 (D) 3520

6. What is the greatest number of axes of symmetry that can be drawn on the square shown?

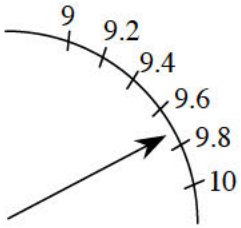


   (A) 0 (B) 1 (C) 2 (D) 4

7. When 705 is divided by 5 the answer is:

   (A) 15 (B) 105 (C) 141 (D) 3525

8. Contestants on "Maths Idol" are rated by an applause meter.
   The arrow on the diagram shows the rating for one of the contestants.
   The best estimate of the rating is:



   (A) 9.3 (B) 9.5 (C) 9.7 (D) 9.9

9. The value of $1 + 0.1 + 0.001$ is:

(A) 1.011 (B) 1.101 (C) 1.110 (D) 1.111

10. Twelve million added to twelve thousand equals:
(A) 12 012 000
(B) 12 120 000
(C) 120 012 000
(D) 120 120 000

11. This is the twenty ninth annual Newcastle Permanent Primary Mathematics Competition. The first competition was conducted in:

(A) 1980 (B) 1981 (C) 1982 (D) 1983

12. For the numbers 127, 172, 712, 271, the difference between the largest and the smallest is:

(A) 144 (B) 441 (C) 540 (D) 585

13. Two squares, each with an area of 25 cm^2, are joined to form a rectangle. The perimeter of this rectangle is:

(A) 5 cm (B) 10 cm (C) 30 cm (D) 50 cm

14. The average of 4, 4, 5, 5 and 5 is:

(A) 4.3 (B) 4.6 (C) 4.8 (D) 5.0

15. Lydia went for a walk every day last week. Each day she walked half as far as she did the day before. If she walked 8 kilometres on Monday last week, then on Friday she walked:

(A) 0.5 km (B) 1 km (C) 2 km (D) 4 km

SECTION B
Each correct answer in this section is worth 3 marks.

16. Which of the following statements is **TRUE**?

(A) 320mm = 32 cm (B) 3.4 kg = 34 g

(C) 460 mL = 4.6 L (D) 1 ha = 100 m^2

17. After running 25% of a race, Kathy had run 50 metres. The length of the race is:

(A) 100 m (B) 150 m (C) 200 m (D) 250 m

18. When Melanie compared the time on her digital watch with that on her mobile phone she discovered that her watch was 1 hour and 42 minutes slow. If the time on her watch was 3:37, then the time shown on her mobile phone was:

(A) 1:55 (B) 2:55 (C) 4:19 (D) 5:19

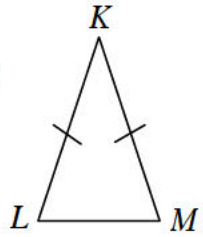
19. Tran is facing North-East. If he turns 225° to his right, he will face:

(A) North-West (B) South-West (C) South (D) West

20. Which of these statements is **NOT TRUE**?

(A) 282 is divisible by 4 (B) 925 is divisible by 5
(C) 1352 is divisible by 2 (D) 101 010 is divisible by 3

21. The base *LM* of the isosceles triangle *KLM* shown is 8 cm less than the side *KL*. The sides *KL* and *KM* are equal. If the perimeter of the triangle is 28 cm, then the length of the side *LM* is:

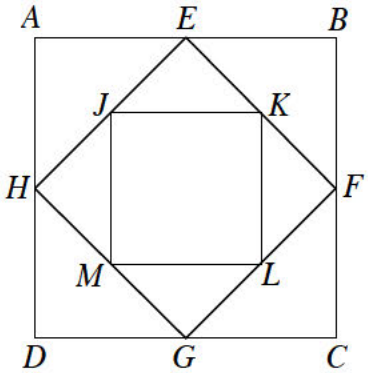


(A) 2 cm (B) 4 cm (C) 10 cm (D) 12 cm

22. The sector graph shows the favourite ice cream flavours of those surveyed. The fraction of the people surveyed who selected either chocolate or mango as their favourite flavour of ice cream is:

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

23. Each shape is a square.
EFGH is drawn from the midpoint of the sides of *ABCD*.
JKLM is drawn from the midpoint of the sides of the *EFGH*.



The area of *JKLM* as a fraction of the area of *ABCD* is:

(A) $\frac{1}{8}$ (B) $\frac{1}{6}$ (C) $\frac{1}{4}$ (D) $\frac{1}{2}$

24. A movie theatre has eleven rows of seats. The rows are numbered from 1 to 11. Odd-numbered rows have 15 seats and even-numbered rows have 16 seats. How many seats are there in the theatre?

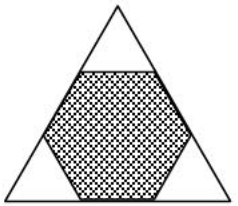
(A) 165 (B) 170 (C) 171 (D) 176

25. To rent a surf ski you have to pay a fixed fee to use the paddle plus a charge of \$12 per hour to use the surf ski. For a three hour rental, the total cost is \$45. What is the total cost to rent the surf ski for 6 hours?

(A) \$66 (B) \$72 (C) \$81 (D) \$90

SECTION C
Each correct answer in this section is worth 4 marks.

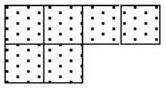
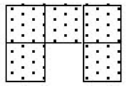
26. A regular hexagon is drawn in an equilateral triangle, as shown. If the area of the hexagon is 12 cm^2 then the area of the original triangle is:



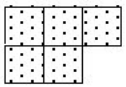
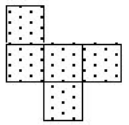
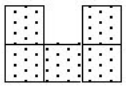
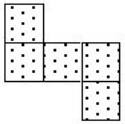
(A) 6 cm^2 (B) 12 cm^2 (C) 18 cm^2 (D) 24 cm^2

27. A prime number is called a "Superprime" if doubling it, and then subtracting 1, results in another prime number. The number of "Superprimes" less than 17 is:

(A) 6 (B) 5 (C) 4 (D) 3

28. These two shapes,  and  , when put together, partially form a 4×4 square.

Which of the following shapes completes the square?

(A)  (B)  (C)  (D) 

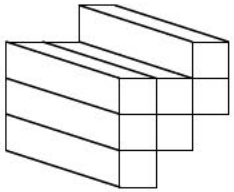
29. The value of $\dfrac{\frac{1}{3}+\frac{1}{3}+\frac{1}{3}}{\frac{1}{3}}$ is:

(A) $\frac{1}{3}$ (B) 1 (C) $1\frac{1}{3}$ (D) 3

30. The product of three *different* whole numbers is 72. The smallest sum of these whole numbers is:

(A) 12 (B) 13 (C) 14 (D) 15

31. In the diagram, the solid is made up of seven 1 cm × 1 cm × 3 cm solids. The total surface area of the solid is:



(A) 56 cm^2

(B) 49 cm^2

(C) 28 cm^2

(D) 21 cm^2

32. Which of the triangles below has the largest angle?

(A) an obtuse-angled isosceles triangle

(B) an equilateral triangle

(C) an acute-angled isosceles triangle

(D) a right-angled triangle

33. The letters a, b and c represent different numbers in the following.

$1^3 = 1$

$a^3 = 1 + 7$

$3^3 = 1 + 9 + b$

$4^3 = 1 + 5 + 13 + c$

The value of $a + b + c$ is:

(A) 2 (B) 17 (C) 45 (D) 64

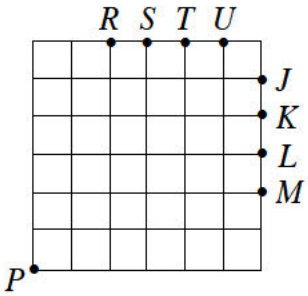
PLEASE TURN OVER FOR QUESTIONS 34 AND 35.

34 In how many ways can 10 be written as the sum of two or more different positive whole numbers? (Changing the order of addition does not count as a different way.)

(A) 7 (B) 8 (C) 9 (D) 10

35. In the 6 by 6 grid shown, two lines are drawn through the point P, dividing the grid into three regions with equal area.

These lines will pass through the points



(A) U and J (B) T and K (C) S and L (D) R and M

THERE ARE NO MORE QUESTIONS.