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, 1 September, 2010

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, gender, school year, five digit Mathematics Competition code and school name.

SECTION A

Each correct answer in this section is worth 2 marks.

1. Fourteen thousand three hundred and fifteen is:

   (A) 4315 (B) 14 035 (C) 14 305 (D) 14 315

2. When counting up by hundreds from 1700, the next two numbers are:

   (A) 1701, 1702 (B) 1710, 1720
   (C) 1800, 1900 (D) 2700, 3700

3. In the set of numbers 3142, 3421, 3124, 3214, the second smallest number is:

   (A) 3142 (B) 3421 (C) 3124 (D) 3214

4. 3207 − 1934 = ____

   The answer is:

   (A) 1263 (B) 1273
   (C) 1373 (D) 5141

5. How many numbers in the list 12, 13, 14, 15, 16, 17, 18, 19 are prime numbers?

   (A) 1 (B) 2 (C) 3 (D) 4

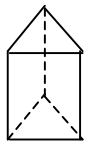
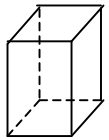
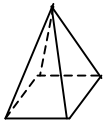
6. Amber spends $12.65. How much change should she get from $20?

   (A) $7.35 (B) $7.45 (C) $8.35 (D) $8.45

7. When 308 is multiplied by 4 the answer is:

   (A) 1502 (B) 1232 (C) 152 (D) 77

8. The diagram that represents a triangular pyramid is:

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

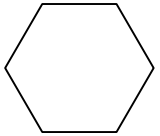
9. The Roman Numeral MMX represents:

(A) 201 (B) 210 (C) 2001 (D) 2010

10. The value of $0.9 + 0.99$ is:

(A) 0.999 (B) 1.08 (C) 1.89 (D) 1.98

11. What is the greatest number of axes of symmetry that can be drawn on the regular hexagon shown?



(A) 0
(B) 1
(C) 3
(D) 6

12. The expression that has a value between 2 and 3 is:

(A) $\frac{19-8}{5}$ (B) $\frac{8+7}{5}$ (C) $\frac{9-4}{5}$ (D) $\frac{6+4}{5}$

13. In the word "DODECAHEDRON", what percentage of the letters are "D"s?

(A) 3% (B) 20% (C) 25% (D) 30%

14 961 is the square of 31. If the digits of 961 are rearranged they form the square of another two-digit number. That number could be:

(A) 23 (B) 19 (C) 16 (D) 14

15. On a map of regional NSW, a length of 1 centimetre represents a real distance of 80 kilometres. What length on the map represents a distance of 600 kilometres?

(A) 75 cm (B) 7.5 cm (C) 6 cm (D) 0.75 cm

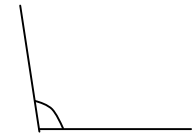
SECTION B

Each correct answer in this section is worth 3 marks.

16. The area of a rectangle is 12 square metres. The lengths of the sides, in metres, are whole numbers. The greatest possible perimeter is:

(A) 12 (B) 14 (C) 16 (D) 26

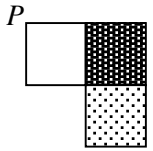
17. The best estimate for the size of this angle is:



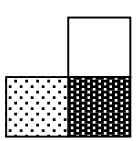
(A) 80° (B) 90° (C) 100° (D) 130°

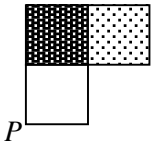
18. A square has an area of 25 cm^2. A rectangle has the same width as the square. The length of the rectangle is double its width. The area of the rectangle is:

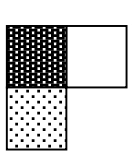
(A) 100 cm^2 (B) 50 cm^2 (C) 25 cm^2 (D) 12.5 cm^2

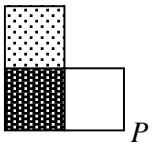
19. If the shape 

is rotated 180° about the point *P*, the resulting figure is:

(A) 

(B) 

(C) 

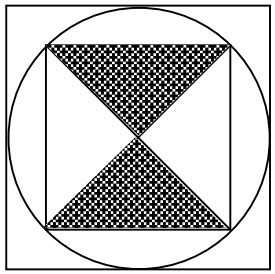
(D) 

20. Rectangular tiles are arranged, without overlapping, to form a square. If each tile is 6 cm by 4 cm, the least number of tiles needed to make a square is:

(A) 4 (B) 6 (C) 8 (D) 12

21. If a 24 hour digital clock displays the time as 17:34, then the time is:

(A) 26 minutes to 6 in the evening.
(B) 26 minutes to 5 in the evening.
(C) 26 minutes to 6 in the morning.
(D) 26 minutes to 5 in the morning.

22. 

What fraction of the large square is shaded?

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

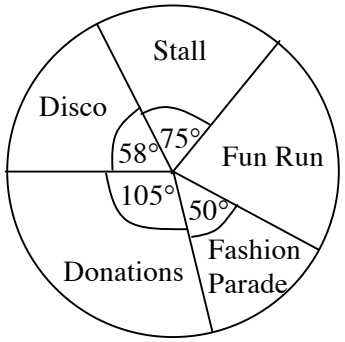
23. When a number is divided by 6 the remainder is 2. If this number is multiplied by 5 and the result is divided by 6 the remainder would be:

(A) 1 (B) 2 (C) 3 (D) 4

24. The ages of the three children in the Bourke family add up to 12. If the ages are multiplied, the result is 48. The oldest child is:

(A) 6 (B) 8 (C) 12 (D) 16

25. A school supported the Newcastle Permanent's Annual Breast Cancer Appeal and raised $2500 by conducting the activities shown in this sector graph.
How much was raised by the Fun Run?



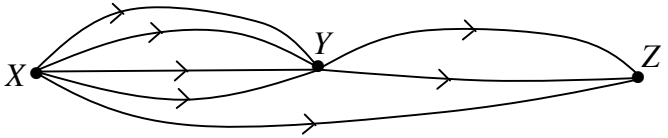
(A) $360
(B) $500
(C) $720
(D) $750

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

26. The product $60 \times 60 \times 24 \times 7$ equals:

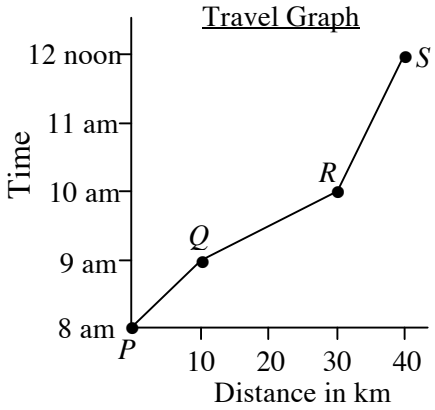
(A) the number of seconds in seven hours
(B) the number of seconds in one week
(C) the number of hours in sixty days
(D) the number of minutes in twenty-four weeks

27. The map below shows all the different roads which join towns *X* and *Z*. How many different routes could you travel from town *X* to town *Z* by travelling only in the direction of the arrows?



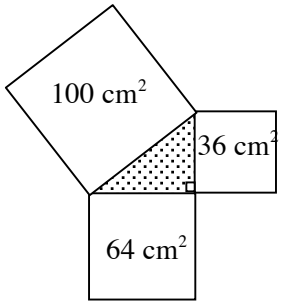
(A) 2 (B) 4 (C) 7 (D) 9

28. *PQRS* shows Kurt's progress as he trains for a bike race. Which section of the graph shows Kurt's average speed to be 20 kilometres per hour?



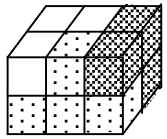
(A) From *P* to *Q*.
(B) From *Q* to *R*
(C) From *R* to *S*.
(D) From *P* to *S*.

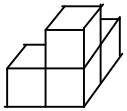
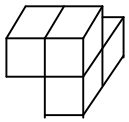
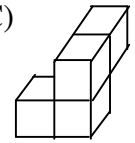
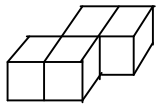
29. The area of each square is given on the figure. The area of the shaded triangle is:



(A) 12 cm^2
(B) 24 cm^2
(C) 48 cm^2
(D) 60 cm^2

30. A rectangular prism is made up of three pieces, each consisting of four cubes glued together. Which piece has the same shape as the white piece?



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

31 Which statement is **FALSE?**

(A) When tossing a coin there is an equal chance of a head or a tail.
(B) If an event is certain to happen then it has a chance of 1.
(C) A cube has 4 faces painted red and 2 faces painted yellow.
When it is rolled, the chance of a red face being on top is $\frac{1}{3}$.
(D) The chance of an event is 0. This means that it will not happen.

32. 32 countries qualified for the 2010 Football World Cup in South Africa. They were arranged into 8 groups of 4 countries, with teams in the group to play each other once. The top 2 teams in each group form the final 16 teams. These teams then play in a knockout series of games (only the winners play in the next round). How many games will the team that wins the World Cup play in South Africa?

(A) 5 (B) 6 (C) 7 (D) 8

33. A shop advertises that "if within 7 days you find the same product at a cheaper price then they will refund the price difference plus 10% of the price difference." I pay $2049 for a lounge suite and the next day I see it priced at $1999. The amount of the refund that I should receive is:

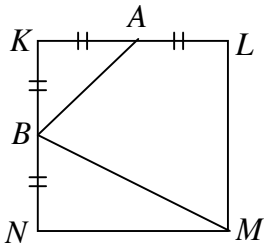
(A) $110 (B) $100 (C) $55 (D) $50

PLEASE TURN OVER FOR QUESTIONS 34 AND 35.

34. The average of three numbers is 23. If one of the numbers is 19, then which of the following statements is **TRUE?**

(A) The other two numbers must be 22 and 28.
(B) The other two numbers must both be even.
(C) One of the other two numbers must be less than 23.
(D) One of the other two numbers must be 25 or more.

35. In the square *KLMN*, *A* is the midpoint of *KL* and *B* is the midpoint of *KN*. If the area of the quadrilateral *BALM* is 25 cm^2, what is the area of the square *KLMN*?



(A) 40 cm^2 (B) 35 cm^2 (C) 30 cm^2 (D) 27.5 cm^2

THERE ARE NO MORE QUESTIONS.