THE NEWCASTLE PERMANENT

PRIMARY MATHEMATICS COMPETITION

Wednesday, 27 August, 2014

Time allowed: 45 minutes

I   truct o

1   Whe   sk d by y   r t   h r, p   this b   kl t a d h k
     that th r ar 35 q   sti s

2.   Calculators, rulers, geometrical instruments or other aids
     ar **NOT** p r itt d

3   **NO**   rk g i t b s w   y r a s r sh t W rki g pap r
     will b s ppli d by y r t a h r if r q ir d

4   A l   r **MUST** b r rd d i **PENCIL**   y r a sw r sh et
     (a **B** p   il r dark r)

5.   When your teacher gives the signal, begin working on the problems.
     You have 45 minutes working time.

6   Marks will **NOT** be d d t d f r i   rr t a sw rs

7.   Make sure that you complete the sections on the answer sheet for
     y r a , g d r, y ar, **fiv digit** Math   atics C p titi   d
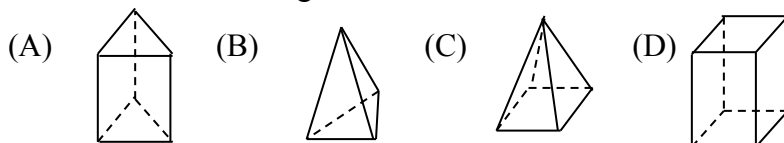   a d **school**   m

SECTION A
Each correct answer in this section is worth 2 marks.

1.   Twenty thousand and ninety seven is:

    (A)   297   (B)   2097   (C)   2907   (D)   20097

2.   The solid that has 9 edges is:

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

3.   41345 −   The answer is:

      634   (A)   40711   (B)   41311

    _____   (C)   41711   (D)   41979

4.   Archie buys a Newcastle Knights' cap for $12.75. How much
      change will he receive if he pays with a $50 note?

    (A) $7.25   (B) $37.25   (C) $38.25   (D) $47.25

5.   What is 12.9 + 1.23 + 153?

    (A)   4.05   (B)   40.5   (C)   166.13   (D)   167.13

6.   Which number gives a remainder of 4 when it is divided by 8?

    (A)   81   (B)   42   (C)   35   (D)   28

7.   The value of 9 + 7 − 6 + 1 is:

    (A)   2   (B)   9   (C)   11   (D)   23

8.   The Roman numeral LXIV represents:

    (A)   44   (B)   46   (C)   64   (D)   66

9.　What is the greatest number of pieces of timber, 70 cm long, which can be cut from a 4 m length?

　　(A)　4　　　　　(B)　5　　　　　(C)　6　　　　　(D)　7

10.　How many prime numbers are in the following list?
　　11, 12, 15, 17, 19, 21, 23

　　(A)　3　　　　　(B)　4　　　　　(C)　5　　　　　(D)　6

11.　When counting down by tens from 3100, the second number reached is:

　　(A)　1100　　　(B)　2900　　　(C)　3080　　　(D)　3120

12.　Another way of writing 307 hundredths is:

　　(A)　0.307　　(B)　3.07　　　(C)　3.7　　　　(D)　30700

13.

　　The best estimate for the size of the shaded angle is:

　　(A)　150°　　　(B)　180°　　　(C)　210°　　　(D)　270°

14.　The value of $3^2 + 2^3$ is:

　　(A)　12　　　　(B)　14　　　　(C)　15　　　　(D)　17

15.　A syringe has a capacity of 2 mL. How many full syringes are needed to fill a container of volume 60 cm^3?

　　(A)　3　　　　　(B)　30　　　　(C)　120　　　(D)　300

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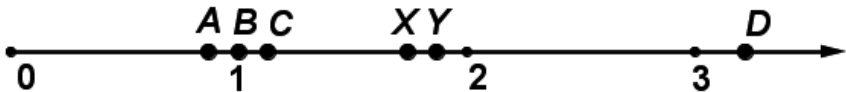Each correct answer in this section is worth 3 marks.

16. A recipe needs $1\frac{1}{2}$ cups of rice bubbles to make 12 chocolate crackles. How many cups of rice bubbles are needed to make 36 chocolate crackles?

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

17. If 50% of a number is 11, what is double the number?

    (A) 5.5   (B) 22   (C) 44   (D) 88

18. $\frac{1}{4} \times 7$ is the same as:

    (A) $\frac{4}{7}$ (B) $1\frac{3}{7}$ (C) $1\frac{3}{4}$ (D) $7\frac{1}{4}$

19. The marked price for a bike is $1250. What would the bike cost if a 20% discount is given?

    (A) $1000   (B) $1200   (C) $1230   (D) $1500

20. At 3:30 one afternoon, Tarsha set the alarm on her digital clock to ring in 40 minutes. What time is displayed on the 24 hour clock when the alarm rings?

    (A) 4:10   (B) 4:40   (C) 16:10   (D) 16:40

21. The table shows the maximum and minimum temperatures, in degrees Celsius, at Perisher Valley during the four seasons one year.

	Summer	Autumn	Winter	Spring
Maximum	25	20	12	21
Minimum	–4	–8	–11	–9

    The season with the greatest temperature variation is:

    (A) Summer   (B) Autumn   (C) Winter   (D) Spring

22. Which whole number is closest to $\frac{15+7}{6-3}$?

(A) 6   (B) 7   (C) 8   (D) 9

23. Contestants in a cooking competition need to have some roast beef cooked and ready to serve at 7.30 pm. The cooking time for beef is 30 minutes for each 500 grams. After cooking has finished, the beef needs to be kept in a covered dish for 20 minutes before serving. If the beef weighs 2 kilograms, at what time should the cooking start?

(A) 5.10 pm (B) 5.30 pm (C) 5.40 pm (D) 9.50 pm

24. Human hair grows at about 0.5 mm per day. If you did not cut your hair, about how many years would it take to grow your hair by 36 cm?

(A) 1   (B) 2   (C) 5   (D) 10

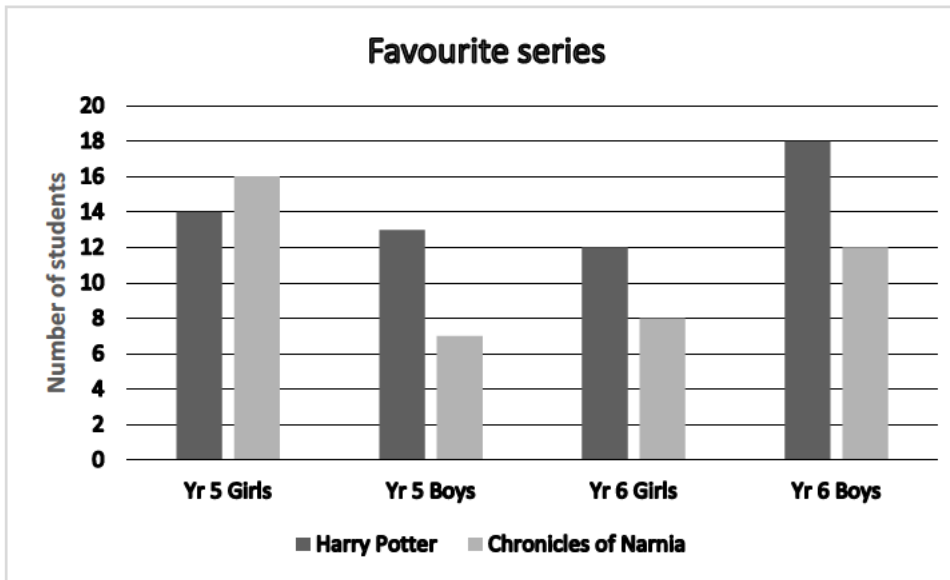25. On the number line: *A, B, C, D, X, Y* represent numbers. Which point best represents the value of $X \div Y$?

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

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

26. If each of the numbers 2, 4, 5, 10 is used once to fill in a $\square$, what is the largest possible value of $\dfrac{\square}{\square} + \dfrac{\square}{\square}$?

    (A) 4   (B) $5\dfrac{4}{5}$ (C) $6\dfrac{1}{4}$ (D) 7

27. Which of the following lists is in order from smallest value to largest value?

    (A) $0.3, \ \dfrac{1}{5}, \ 25\%, \ \dfrac{1}{3}$ (B) $\dfrac{1}{5}, \ 25\%, \ 0.3, \ \dfrac{1}{3}$

    (C) $\dfrac{1}{3}, \ 0.3, \ 25\%, \ \dfrac{1}{5}$ (D) $25\%, \ \dfrac{1}{5}, \ \dfrac{1}{3}, \ 0.3$

28. 50 girls in total from Years 5 and 6 and 50 boys in total from Years 5 and 6 were asked to name their favourite series of books: Harry Potter or Chronicles of Narnia.
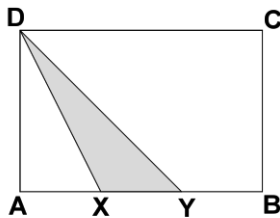

What percentage of boys prefer Harry Potter?

    (A) 26%   (B) 31%   (C) 38%   (D) 62%

29. This year the International Children's Games will be held in Lake Macquarie from December 6th to 11th. It is expected that the Games will attract about 5000 visitors who will spend a total of 5 million dollars. The average amount of money spent per visitor per day is closest to:
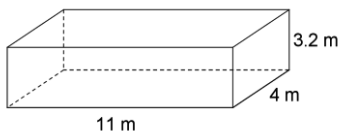
   (A) $100   (B) $200   (C) $300   (D) $1000

30. The diagram shows a rectangle *ABCD* with side *AB* 15 cm and side *BC* 10 cm. The length of *XY* is one third of the length of *AB*. What fraction of the rectangle is the shaded area?

   (A) $\frac{1}{6}$ (B) $\frac{1}{4}$ (C) $\frac{1}{3}$ (D) $\frac{1}{2}$
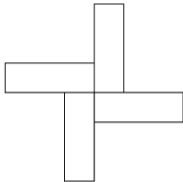
31.

   A storeroom in a school is a rectangular prism. The floor is an 11 m by 4 m rectangle. The walls are 3.2 m high. There are no windows and only one door into the room. The inside walls of the storeroom and the inside of the door are to be given two coats of paint. It is known that 1 L of paint is needed to do one coat on 16 m^{2} of wall area. The number of litres of paint needed is:

   (A) 12   (B) 10   (C) 8   (D) 6

32. During the year, students do 5 Mathematics tests. Each one is marked out of 100. At the end of the year any student who averages 80 or more for the tests will receive a 'Master of Mathematics' award.
    Thomas averaged 74% in the first 4 tests. What mark will he need to score in the 5th test to earn the award?

    (A)   80   (B)   86
    (C)   100   (D)   he can't get the award

33. 42 cubes, each with 1 cm edges, are glued together to make a solid rectangular block. The perimeter of the base of the block is 18 cm. The height of the block, in cm, is:

    (A) 2   (B)   3   (C) 4   (D)   7

34. The figure shown below is made up of 4 identical rectangles.

    In each rectangle the length is 3 times the width. The perimeter of the figure is 96 cm. The area of the figure, in cm^2, is:

    (A)   27   (B)   48   (C) 108   (D)   192

35. Solomon rides up a 2 km long hill at an average speed of 10 km/h, then rides back down in 4 minutes. His average speed for the entire ride is:

    (A)   15 km/h   (B)   20 km/h   (C) 22 km/h   (D)   25 km/h

THERE ARE NO MORE QUESTIONS.

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