THE NEWCASTLE PERMANENT

PRIMARY MATHEMATICS COMPETITION

Wednesday, 24 August, 2016

Time allowed: 45 minutes

Instructions:

1. When asked by your teacher, open this booklet and check that there are 35 questions.

2. Calculators, electronic devices, 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 darker)

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

SECTION A

Each correct answer in this section is worth 2 marks.

1. Seven and two hundredths is:

    (A) 0.72   (B) 7.02   (C) 7.2   (D) 207

2. The number of grams in 0.8 kilograms is:

    (A) 0.0008   (B) 80   (C) 800   (D) 8000

3. $7.5 + 0.15 + 23 =$

    (A) 7.88   (B) 9.95   (C) 11.3   (D) 30.65

4. The area of the triangle shown is:
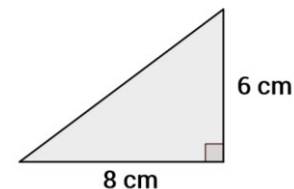
    (A) 14 cm^2 (B) 24 cm^2 (C) 48 cm^2 (D) 96 cm^2

5. The solid shown is a:

    (A) rectangular pyramid   (B) triangular prism
    (C) rectangular prism   (D) triangular pyramid

6. $3 + 8 \times 2 =$

    (A) 13   (B) 19   (C) 22   (D) 48

7. Tom bought a Blu Ray DVD for $39.50 and a CD for $12.00. How much change did he receive if he paid with a $100 note?

    (A) $51.50   (B) $49.50   (C) $48.50   (D) $27.50

8. $58 \times 35 =$

(A) $60 \times 35 - 70$ (B) $60 \times 35 + 35$

(C) $60 \times 35 - 35$ (D) $60 \times 35 + 70$

9. Which of the following could **<u>NOT</u>** be an angle in a right-angled triangle?

(A) $70°$ (B) $80°$ (C) $90°$ (D) $100°$

10. If 3 ice-creams cost $7.20 how much would it cost to buy 5 of the same ice-creams?

(A) $12   (B) $13   (C) $15.20   (D) $36

11. What is the sum of 0.25 and $\frac{3}{5}$?

(A) 0.45   (B) 0.55   (C) 0.65   (D) 0.85

12. At midnight the temperature was $-4°$. In the next 6 hours the temperature dropped by $7°$. What was the temperature at 6 am?

(A) $-11°$ (B) $-10°$ (C) $-3°$ (D) $3°$

13. What is the 6th number in a pattern where the first number is 3 and the numbers decrease by 0.6?

(A) 1.2   (B) 0.6   (C) 0   (D) -0.6

14. When 2.018 is rounded off correct to the nearest tenth, the answer is:

(A) 2.0   (B) 2.1   (C) 2.01   (D) 2.02

15. The difference between the 5th square number and the 4th square number is:
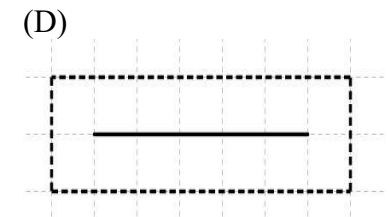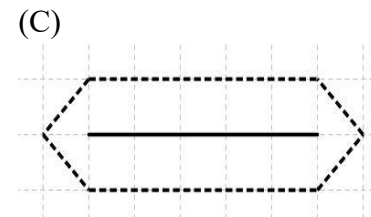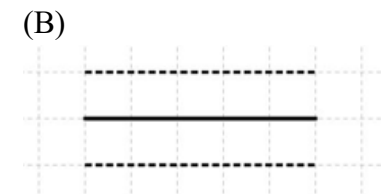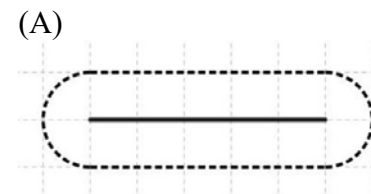
(A) 1   (B) 9   (C) 11   (D) 41

SECTION B

Each correct answer in this section is worth 3 marks.

16. A 5 unit long line segment is drawn.

Which of the following best shows the shape which is always 1 unit from the line segment?

(A)   (B)

(C)   (D)

17. If September 1st is a Tuesday, October 1st will be a:

(A) Monday   (B) Tuesday

(C) Wednesday   (D) Thursday

18. What is the sum of the prime numbers between 40 and 50?

(A) 180   (B) 131   (C) 90   (D) 84

19. When Archie walks he takes 3 steps to go 5 metres while Sylvie takes 5 steps to go 4 metres. If they start walking from the same point, with Archie walking East and Sylvie walking West, how far apart are they after each has taken 300 steps?

(A)　260 m　　(B)　740 m　　(C)　775 m　　(D)　900 m

20. When Jamin does archery, he has a 2 in 5 chance of hitting the target. On his next shot, the probability that he will miss the target is:

(A)　0　　　(B)　$\dfrac{2}{5}$　　　(C)　$\dfrac{3}{5}$　　　(D)　3

21. George the geometric snail likes to move in geometric patterns on a number plane. He starts at the point $(2,0)$, moves clockwise around a semicircle with centre $(-1,0)$ and then moves 5 units vertically up the number plane. He finishes at the point:

(A)　$(-4,5)$　　(B)　$(-4,1)$　　(C)　$(-1,5)$　　(D)　$(-4,-5)$

22. The students in a class were asked to name their favourite fruit. The table shows the results.

Fruit	Boys	Girls
Water melon	7	4
Orange	2	3
Apple	6	3

What percentage of all students prefer oranges?

(A)　5%　　(B)　15%　　(C)　20%　　(D)　25%

23. On average, each person in a family of 4 uses 150 litres of water per day. Which answer shows the **approximate** number of kilolitres that the family would be likely to use in one month?

(A)　200　　(B)　20　　(C)　2　　(D)　0.2

24. Which of the following fractions does **NOT** lie between $\dfrac{1}{4}$ and $\dfrac{2}{3}$ on the number line?

(A)　$\dfrac{1}{3}$　　(B)　$\dfrac{1}{2}$　　(C)　$\dfrac{7}{12}$　　(D)　$\dfrac{3}{4}$

25 I thought of a number, added 2, divided by 5 and then subtracted 1. The result was 8. The number that I began with was:

(A)　1　　(B)　37　　(C)　43　　(D)　47

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

26. The teacher gave the class the following clues about a triangle.
Clue 1: "The first angle that I measured was 70°."
Clue 2: "When I measured the other angles I found that the difference between them was 30°."
What type of triangle is it?

(A)　scalene　　　　　　　(B)　isosceles
(C)　equilateral　　　　　(D)　right angled

27. Tarsha travels from Broadmeadow to Wauchope by train. The train leaves Broadmeadow at 9.40, which is 4 minutes late. It arrives at Wauchope at 13.45, which is 3 minutes early. How long would the trip take if the train left and arrived on time?

(A)　4 hr 12 min　　　　(B)　4 hrs 9 min
(C)　4 hr 8 min　　　　　(D)　4 hr 5 min

28. The value of $\dfrac{1}{2+3}+\dfrac{4}{5}+\dfrac{6}{7+8}+\dfrac{9}{10}$ is:

(A)　$\dfrac{20}{35}$　　(B)　$\dfrac{16}{15}$　　(C)　$1\dfrac{3}{10}$　　(D)　$2\dfrac{3}{10}$

29. 1, 2, 4, 8, 16, ……..
In this list of numbers each number, apart from 1, is found by doubling the previous number. If the list was continued, what would be the **last digit** in the 2016th number in the list?

(A) 8   (B) 6   (C) 4   (D) 2

30. A square field has 12 posts equally spaced every 5 metres around it. The area of the field in square metres is:

(A) 60   (B) 144   (C) 225   (D) 400

31. After Sol had spent $\frac{3}{5}$ of his money he had $30 left. How much money did he have at the beginning?

(A) $18   (B) $48   (C) $50   (D) $75

32. WOOLLOOMOOLOO is a suburb of Sydney.
Each of the letters W, O, L and M stands for a different digit, and it is known that

W + O + O + L = 12
L+ O + O + M =13
L + O + O = 11
L = M + W

What is the value of

W + O + O + L + L +O + O + M + O + O + L + O + O ?

(A) 36   (B) 42   (C) 44   (D) 49

33. A cube is made by joining together 8 identical smaller cubes. How many of the smaller cubes have 3 faces showing?

(A) 0   (B) 2   (C) 4   (D) 8

34. In the diving competition at the Olympic Games, divers may choose which style of dive to perform. Since some dives are more complicated to perform than others, each dive has a 'degree of difficulty'.
Each dive is scored by 7 judges, with each judge giving a mark from 0 to 10. The final score for that dive is then calculated by:
- discarding the two highest and the two lowest marks
- finding the total of the three remaining marks
- multiplying the total of these middle three marks by the degree of difficulty of the dive.
If a diver was given a score of 64.0 for a dive, and the judges' marks for that dive were 6.5, 6.0, 7.5, 6.5, 8.0, 6.5, 7.0 then the degree of difficulty was:

(A) 3.0   (B) 3.2   (C) 3.4   (D) 3.6

35. If the following pattern was continued, what would be the sum of the first and last numbers of the 10th row?

1
2   3
4   5   6
7   8   9   10
………………………………

(A) 56   (B) 82   (C) 101   (D) 122

THERE ARE NO MORE QUESTIONS.