Hunter Region Independent Schools

Catholic Schools Office
DIOCESE OF MAITLAND-NEWCASTLE

NSW GOVERNMENT Education & Communities

NEWCASTLE PERMANENT
Here for good.

THE NEWCASTLE PERMANENT

PRIMARY MATHEMATICS COMPETITION

Wednesday, 26 August, 2015

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. Three thousand one hundred and seven is:

   (A) 317 (B) 3017 (C) 3107 (D) 3170

2. The number of centimetres in 2.5 metres is:

   (A) 2500 (B) 250 (C) 25 (D) 0.25

3. $612 \times 5 =$

   (A) 617 (B) 660 (C) 3060 (D) 3600

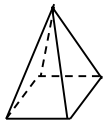
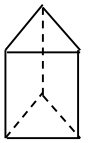
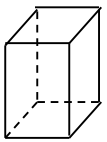
4. An example of an obtuse angle is:

   (A) 70° (B) 130° (C) 180° (D) 240°

5. Half of 5.12 is:

   (A) 2.06 (B) 2.51 (C) 2.56 (D) 2.6

6. The pyramid that has 5 faces is:

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

7. How much would Alice be paid for delivering 400 pamphlets if she is paid 6 cents per pamphlet?

   (A) \$240.00 (B) \$24.00 (C) \$4.06 (D) \$2.40

8. Jamin spent $\frac{3}{5}$ of \$30.00. How much is left?

   (A) \$12.00 (B) \$15.00 (C) \$18.00 (D) \$20.00

9. Since $2015 = 5 \times 13 \times 31$, then $2015 \div 31 =$

   (A) 5 (B) 13 (C) 18 (D) 65

10. Which of the following is an odd number between 5^2 and 7^2, and is divisible by 3?

(A) 21 (B) 27 (C) 35 (D) 36

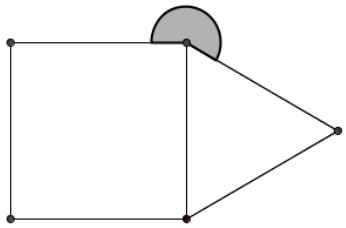
11. The crowd at the Newcastle Knights first game was 15 000. How many attended the second game if there was a 10% increase?

(A) 150 (B) 1500 (C) 15 500 (D) 16 500

12. Which of the two shapes, isosceles triangle and semicircle, has an axis of symmetry?

(A) neither (B) isosceles triangle only
(C) semicircle only (D) both

13. The diagram shows an equilateral triangle sharing a side with a square. The size of the shaded angle is:



(A) 60° (B) 90° (C) 150° (D) 210°

14. 7 × 24 × 60 would be used to work out the number of:

(A) minutes in a week (B) minutes in 7 hours
(C) seconds in a week (D) minutes in a day

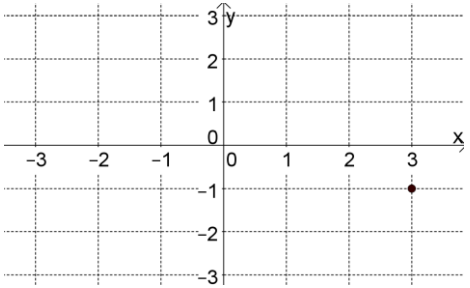
15. 103 Year Six students and 13 teachers have to travel to camp by minibus. Each minibus carries 11 passengers. How many minibuses are needed?

(A) 9 (B) 10 (C) 11 (D) 12

SECTION B

Each correct answer in this section is worth 3 marks.

16. What are the coordinates of the point marked by the large dot on the number plane?



(A) $(3,-1)$ (B) $(-1,3)$ (C) $(1,-3)$ (D) $(-3,-1)$

17. Sylvie is facing South East, then turns 135° in a clockwise direction. She is now facing:

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

18. If $\frac{5\times8\times10}{\square} = 20$, then $\square$ =

(A) 4 (B) 10 (C) 20 (D) 40

19. What is the difference between the largest and smallest of the four numbers 5138, 3815, 1853, 5381?

(A) 3285 (B) 3528 (C) 6991 (D) 7234

20. Alexis bought a calculator and 10 pens for $66. The calculator cost 12 times as much as each pen. Find the cost of the calculator.

(A) $6 (B) $36 (C) $60 (D) $72

21. 45 grams of butter is used to make 9 cakes. How many grams of butter are needed to make 7 cakes?

(A) 35 (B) 63 (C) 315 (D) 405

22. In the year 2016, Christmas Day (25th December) is a Sunday. The 25th of January 2017 will be a:

(A) Wednesday (B) Thursday
(C) Friday (D) Saturday

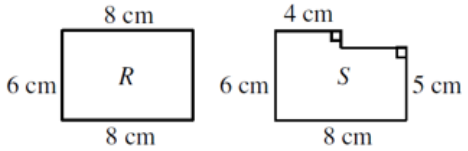
23. A hiking group left at 1620 on Friday to walk to their campsite. Along the way they became lost and arrived at their campsite at 0915 on Saturday.
How long did the walk take?

(A) 7 hours 5 minutes (B) 12 hours 55 minutes
(C) 16 hours 55 minutes (D) 25 hours 35 minutes

24. Six different bags each contain 1 red, 2 blue and 3 yellow marbles. Tom is blindfolded and asked to select a marble from each bag. From the first five bags Tom selected the following marbles:
Bag 1: yellow Bag 2: blue Bag 3: red
Bag 4: blue Bag 5: red
The marble that Tom selects from the sixth bag is:

(A) certain to be yellow or blue (B) most likely to be blue
(C) impossible to be red (D) most likely to be yellow

25 Bianca has a rectangle *R*, then cuts a smaller rectangle from a corner of *R* to leave shape *S* as shown.



When she changed from rectangle *R* to shape *S*:

(A) the area and perimeter both decreased
(B) the area decreased and the perimeter increased
(C) the area and perimeter both increased
(D) the area decreased and the perimeter was unchanged

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

26. 615 is a three digit number in which the product of its digits is 30. $(6 \times 1 \times 5 = 30)$. How many three digit numbers are there for which the product of the digits is 20?

(A) 2 (B) 6 (C) 9 (D) 12

27. An unusual, but sometimes useful, way to find the sum of $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10$ is:

$1 + 10 = 11, 2 + 9 = 11, 3 + 8 = 11, 4 + 7 = 11, 5 + 6 = 11$

There are 5 lots of 11, so the sum of the whole numbers from 1 to 10 is 55.
What is the sum of the whole numbers from 101 to 300?

(A) 40100 (B) 30300 (C) 4010 (D) 401

28. A 12 000 litre tank is full of rainwater after a storm. There are three pumps that can be used to empty it. It takes 8 hours to empty the tank using only the first pump, it takes 12 hours to empty the tank using only the second pump and it takes 24 hours to empty the tank using only the third pump. How long will it take to empty the tank if all three pumps are used together?

(A) 2 hours (B) 3 hours (C) 4 hours (D) 6 hours

29. 30% of 3 cm is:

(A) 1 cm (B) 9 cm (C) 1 mm (D) 9 mm

30. The temperature at 6 am at Frosty Creek for each day in a week is:
$-2℃, -4℃, 6℃, 5℃, 0℃, 3℃, -1℃.$
The average of these temperatures is:

(A) $-1℃$ (B) $0℃$ (C) $1℃$ (D) $3℃$

31. Paper used for normal printing or writing is usually 80 gsm, where gsm means grams per square metre.
Paper can be bought in different sizes A0, A1, A2, A3, A4, A5.
A sheet of A0 paper has an area of 1 square metre, A1 is half the area of A0, A2 is half the area of A1, A3 is half the area of A2, and so on.
The mass of a ream (package of 500 sheets) of 80 gsm paper in size A3 is:

(A) 0.5 kg (B) 2.5 kg (C) 5 kg (D) 10 kg

32. A paddock on a farm is a rectangle 1.2 km long and 200 m wide. The area of the paddock is:

(A) 2.4 ha (B) 24 ha (C) 240 ha (D) 2400 ha

33. When Kelly bought some new camping equipment she received a 30% discount on a tent (normal price $180), one quarter off a gas cooker (normal price $80), and got a half price deal on a sleeping bag (normal price $140). What was the effective percentage discount that she received overall on the total of these purchases?

(A) 35% (B) 36% (C) 40% (D) 105%

34. 5! (which mathematicians read as 5 factorial) means the product of all whole numbers starting from 5 and counting down to 1.
So: $5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$ and $3! = 3 \times 2 \times 1 = 6$
Using this notation, 10! =

(A) $90 \times 8!$ (B) $8! + 2!$ (C) $20! \div 2$ (D) $2 \times 5!$

35. On Rainbow St all of the houses on one side of the street, numbered from 2 to 100, are painted as shown in the following table. The patterns for roof colour and fence colour continue to number 100.

House number	2	4	6	8	10	12	14
Roof colour	Red	Blue	Grey	White	Red	Blue	Grey
Fence colour	Brown	Green	White	Brown	Green	White	Brown

How many houses have both a white roof and a white fence?

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

THERE ARE NO MORE QUESTIONS.