



THE NEWCASTLE PERMANENT

PRIMARY MATHEMATICS COMPETITION

Wednesday 21 August 2019

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, school name and five digit Mathematics Competition Code.**

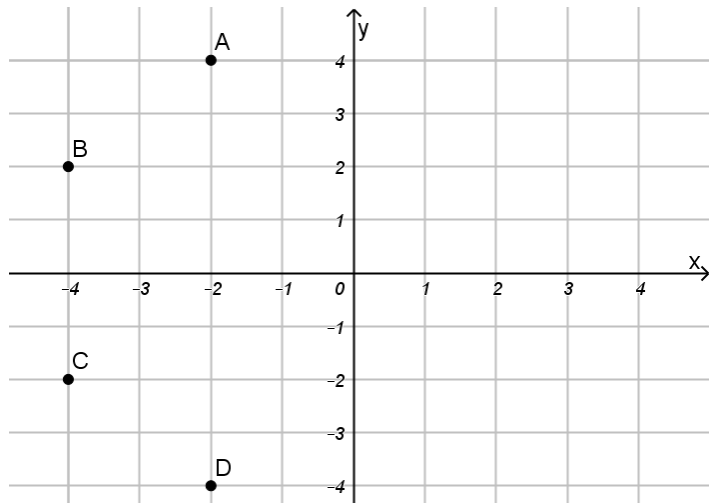
SECTION A

Each correct answer in this section is worth 2 marks.

1. A protractor is used to measure:
(A) time (B) area (C) mass (D) angle size
2. Four friends have a meal together at a cafe. The total cost is \$75.80. They agree to pay equal shares. How much does each friend pay?
(A) \$18.95 (B) \$18.85 (C) \$17.95 (D) \$17.85
3. Two and thirteen thousandths is written as:
(A) 2.130 (B) 2.013 (C) 2.13 (D) 0.213
4. $(12 - 6) \div 3 =$
(A) 2 (B) 3 (C) 10 (D) 14
5. In a triangle, one angle is 40° and another is 60° . What is the size of the third angle?
(A) 40° (B) 60° (C) 80° (D) 100°
6. The difference between 197 and 1 000 is:
(A) 803 (B) 813 (C) 903 (D) 1 197
7. The number of kilograms in 2 019 grams is:
(A) 0.2019 (B) 2.019 (C) 20.19 (D) 201.9
8. Which of the following is the best approximation to 798×5.1 ?
(A) 400 (B) 3 500 (C) 4 000 (D) 5 000
9. How many lines of symmetry does a rectangle have?
(A) 4 (B) 2 (C) 1 (D) 0

10. Which of the following is a **false** statement?
- (A) $-3 > -5$ (B) $2.6 > -4$
- (C) $\frac{1}{10} > \frac{1}{9}$ (D) $12 \div 2 + 1 > 12 \div (2 + 1)$

11. Which point has coordinates $(-2, -4)$?



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

12. How many minutes are there between 11.40 pm and 3.10 am the next day?

- (A) 250 (B) 230 (C) 210 (D) 190

13. If one letter from the word POSSUM is chosen, what is the probability that it will be an S?

- (A) $\frac{1}{6}$ (B) $\frac{1}{5}$ (C) $\frac{1}{4}$ (D) $\frac{1}{3}$

14. Which of the following solids has 5 faces and 9 edges?

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

15. Which of the following is between 2 and 3 ?

- (A) $\frac{7}{2}$ (B) $\frac{7}{3}$ (C) $\frac{7}{4}$ (D) $\frac{7}{5}$

SECTION B

Each correct answer in this section is worth 3 marks.

16. The area of a rectangle is 25 cm^2 and it has a width of 2 cm. The perimeter of the rectangle is:

- (A) 14.5 cm (B) 27 cm (C) 29 cm (D) 50 cm

17. If you started at 13 and continued to count **backwards** by 4, the first number reached which is less than -13 would be:

- (A) -7 (B) -11 (C) -14 (D) -15

18. The picture shows a cube made of 27 smaller cubes. If one of the small cubes at a vertex of the big cube is removed, which of the following statements about the big cube is true?



- (A) Volume decreased, surface area increased
(B) Volume decreased, surface area decreased
(C) Volume decreased, surface area unchanged
(D) Volume increased, surface area unchanged

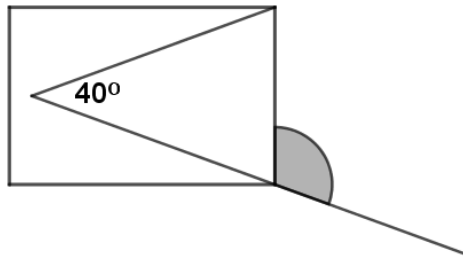
19. In a game the player turns over a card to show the colour of a single dot on its underside. Each dot is red or green or blue. It is known that 30% of the cards have a red dot and 1 in 10 have a blue dot. If the game was played 50 times, how many green dots would you expect to get?

- (A) 5 (B) 15 (C) 20 (D) 30

20. The average of 7.6, 1.02 and 0.404 is:
 (A) 1.94 (B) 3.008 (C) 3.08 (D) 4.512
21. In how many ways could 48 identical items be packed into parcels so that each parcel has the same number of items in it and no items are left out? For example, there could be 12 parcels with 4 items in each, or 4 parcels with 12 items in each.

- (A) 10 (B) 8 (C) 6 (D) 5

22. The diagram shows a rectangle with an **acute angled isosceles triangle** inside it. One of the equal sides of the triangle has been extended to form a straight line. What is the size of the shaded angle?



- (A) 110° (B) 120° (C) 140° (D) 160°

23. What is the product of 15 thousand and 20 thousand?

- (A) 300 thousand (B) 3 million
 (C) 300 million (D) 3 billion

24. $2\frac{5}{8} - \frac{3}{4} =$

- (A) $\frac{7}{8}$ (B) $1\frac{7}{8}$ (C) $2\frac{1}{8}$ (D) $2\frac{2}{4}$

25. Which of the following numbers has 15 as a factor?

- (A) 825 (B) 850 (C) 873 (D) 875

SECTION C

Each correct answer in this section is worth 4 marks.

26. Every Saturday a man goes for a walk which always takes between 2.5 and 3.5 hours. His average speed when walking is always between 4 and 5 km/h. Which of the following could be a distance that he walked?

- (A) 7 km (B) 8 km (C) 15 km (D) 20 km

27. $-670 + 951 =$

- (A) -1621 (B) -281 (C) 281 (D) 1621

28. A Golden Triangle is an isosceles triangle in which the equal angles are 72° , as shown in Diagram 1. Amy carefully bisects one of the equal angles, as shown in Diagram 2. (Bisecting means dividing into 2 equal parts).

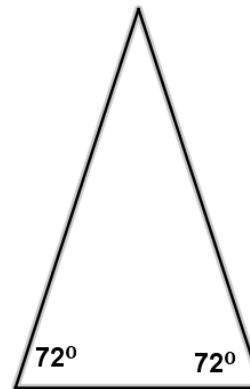


Diagram 1

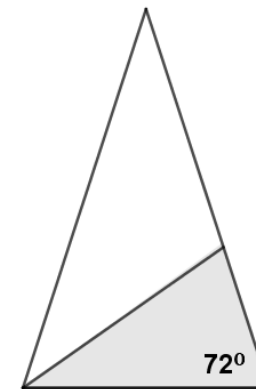


Diagram 2

Amy now discovers that the shaded triangle in Diagram 2 is:

- (A) A right-angled triangle (B) A golden triangle
 (C) A scalene triangle (D) An equilateral triangle

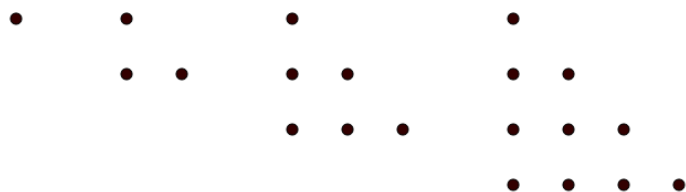
29. 100 students were asked if they liked the new school uniform. The results are summarised in the table below.

	Boys		Girls	
	Like	Dislike	Like	Dislike
Year 3	10	8	8	4
Year 4	12	2	12	0
Year 5	9	1	13	2
Year 6	8	1	8	2

What percentage of Year 3 like the uniform?

- (A) 60% (B) 30% (C) 18% (D) 10%
30. The triangular numbers are 1, 3, 6, 10, ...

Triangular numbers



The 49th triangular number is known to be 1225.
The 51st triangular number is:

- (A) 1326 (B) 1325 (C) 1275 (D) 1250
31. The number $3 + (2 \times 3 \times 5 \times 7 \times 11 \times 13)$ is:
- (A) even and prime (B) odd and prime
(C) even and composite (D) odd and composite
32. When 963 642 321 is divided by 321 the answer is:
- (A) 321 (B) 30 201 (C) 30 021 (D) 3 002 001

33. A mother wants to buy a wetsuit for each of her 4 children. She knows that one wetsuit alone costs \$80 but she finds the following retailers are giving special deals:

Shop A Buy 3, get the fourth at half price

Shop B 20% discount on all purchases

Shop C \$50 cash back on sales over \$200

Shop D Buy 2, get \$20 off the third, get the fourth at half price

Which shop gives the lowest price for four wetsuits?

- (A) Shop A (B) Shop B (C) Shop C (D) Shop D

34. Anne, who is 40 years old, wants to improve her fitness. Her personal trainer explains that Anne's maximum heart rate (MHR) in beats per minute can be estimated by subtracting her age from 220. The trainer then sets Anne the goal of doing exercise which makes her heart beat between 50% and 70% of her MHR.

To achieve this goal when exercising, Anne's heart rate in beats per minute should be between:

- (A) 110 and 154 (B) 90 and 154
(C) 110 and 126 (D) 90 and 126

35. There are 60 lockers side-by-side along the corridor. Abe starts at one end of the corridor and walks past the lockers putting a sticker on every 2nd locker. Ben starts at the same end and walks past the lockers putting a sticker on every 3rd locker. Chris starts at the same end and walks past the lockers putting a sticker on every 5th locker. How many lockers have more than 1 sticker?

- (A) 14 (B) 16 (C) 20 (D) 22

THERE ARE NO MORE QUESTIONS.