



**THE
AMERICAN
ACADEMY
NICOSIA**
PRIVATE SCHOOL
EST. 1922

The American Academy Nicosia

Sample 1 Entrance Examination

Serial number 202212

Mathematics

Year 7

Time Allowed: 1 hour

Read the below instructions carefully before starting the exam:

- Read all instructions carefully.
- If you cannot answer a particular question, move on to the next one without losing time.
- Use of calculator is not allowed.

1. Work out:

$$(a) \begin{array}{r} 2739 \\ + 0639 \\ \hline 3378 \end{array}$$

= 3378

[1]

(b) $8491 - 987 =$

$$\begin{array}{r} 714811 \\ - 8491 \\ \hline 7504 \end{array}$$

[1]

(c) $657 \times 8 =$

= 7504

$$\begin{array}{r} 545 \\ \times 657 \\ \hline 5256 \end{array}$$

(d) $1048 \div 8 =$

$$\begin{array}{r} 131 \\ 8 \overline{)1048} \\ \underline{8} \\ 24 \\ \underline{24} \\ 08 \\ \underline{8} \\ 0 \end{array}$$

= 5256

[1]

The solution for Long Division of $\frac{1048}{8}$ is 131

[1]

2. Calculate:

(a) $\frac{2}{3} - \frac{3}{5} =$

$$\frac{2}{3} - \frac{3}{5}$$

$$= \frac{10}{15} - \frac{9}{15}$$

$$= \frac{10-9}{15} = \frac{1}{15}$$

[3]

(b) $\frac{3}{4} \times \frac{7}{27} = \frac{1}{4} \times \frac{7}{9} = \frac{7}{36}$

[3]

(c) $\frac{7}{8} \div \frac{3}{4} = \frac{7}{8} \times \frac{4}{3} = \frac{7}{2} \times \frac{1}{3} = \frac{7}{6} = 1\frac{1}{6}$

[3]

3. Find the next two numbers in these sequences:

(a) 4, 7, 10, 13,16.....,19.....

(b) 37, 32, 27, 22,17.....,12.....

[4]

4. 732 students from Nicosia are going to the Waterworld Water Park at Ayia Napa. There are 14 coaches to transport them each of which can take 50 students.

(a) How many students can travel in the coaches?

$$14 \times 50 = 700$$

[3]

(b) The students that cannot fit onto the coaches are transported by taxi. Each taxi can transport 4 students. How many taxis are needed?

$$732 - 700 = 32$$

$$32 \div 4 = 8$$

8 taxis are needed

[3]

5. Work out $7 \times 14 - 5 \times 15$

$$7 \times 14 = 98$$

$$5 \times 15 = 75$$

$$98 - 75 = 23$$

[3]

6. Adam spends $\frac{2}{5}$ of his salary every month. If he earns €1080 per month, how much money does he spend?

$$1080 \div 5 = 216$$
$$216 \times 2 = 432$$

$$\begin{array}{r} 216 \\ 5 \overline{) 1080} \\ \underline{10} \\ 08 \\ \underline{5} \\ 30 \\ \underline{30} \\ 0 \end{array}$$

[3]

-
7. How many centimetres are there in 5.3 metres?

$$5.3 \times 100 = 530cm$$

[1]

-
8. If 5 calculators cost €117.50. find how much we will pay for 7 calculators.

$$117.50 \div 5 = 23.5$$

$$23.5 \times 7 = 164.5$$

$$\begin{array}{r} 23.5 \\ 5 \overline{) 117.5} \\ \underline{10} \\ 17 \\ \underline{15} \\ 25 \\ \underline{25} \\ 0 \end{array}$$

[3]

-
9. Calculate how much bigger $3\frac{1}{4}$ is than $1\frac{3}{4}$, writing your answer as a decimal.

$$= 3\frac{1}{4} - 1\frac{3}{4}$$

$$= \frac{13}{4} - \frac{7}{4}$$

$$= \frac{6}{4} = 1\frac{2}{4} = 1.5$$

[4]

10. A newborn baby weighs 3250 grams. What is this in kilograms?

$$3250 \div 1000 = 3.25 \text{ Kg}$$

[1]

11. For Ben's birthday he goes to the cinema. Tickets cost €3.85 for children and €5.50 for adults. In his party there are 4 children and 2 adults.

(a) How much does he pay for all the tickets?

$$4 \times 3.85 = 15.40$$

$$2 \times 5.50 = 11.00$$

$$15.40 + 11.00 = \mathbf{\text{€}26.40}$$

[3]

(b) Ben's mum pays with two €20 notes for the tickets. How much change does she receive?

$$26.40 - 20 = 6.40$$

$$20.00 - 6.40 = 13.60$$

$$\begin{array}{r} 19.10 \\ - 06.40 \\ \hline 12.70 \end{array}$$

$$= 12.70$$

[2]

12. In Russia the temperature was -23°C , while at the same time in Greece was 3°C . What is the difference between the temperature in Russia and Greece?

$$= 3 - (-23)$$

$$= 3 + 23$$

$$= 26^{\circ}\text{C}$$

[2]

13. Convert these to decimals:

(a) $5\% = 0.05$

[1]

(b) $\frac{3}{25} = \frac{12}{100} = 0.12$

[1]

14. A train leaves station A at 07:24 and arrives at station B at 11:03. How long did the journey take? Give your answer in hours and minutes.

From 7:24 until 10:24 = 3 hours

From 10:24 until 11:00 = 36 minutes

From 11:00 until 11:03 = 3 minutes

Total: 3 hours and 39 minutes

[3]

15. I think of a number, add 6 and then multiply by 4 and the result is 36. What was the number I thought of?

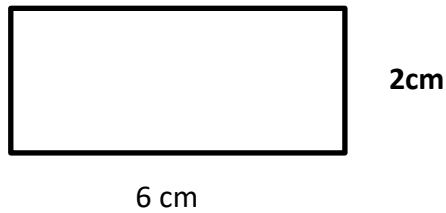
$$((\quad) + 6) \times 4 = 36$$

$$(\quad) + 6 = 9$$

$$(\quad) = 3$$

[2]

16. The length of this rectangle is three times as its width. Find the area and the perimeter of the rectangle.



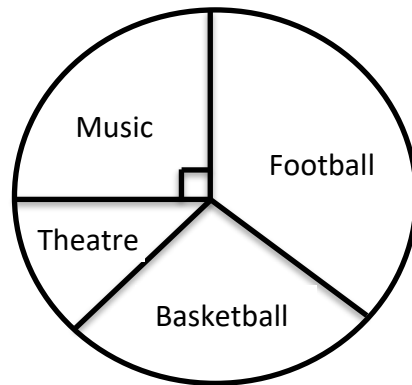
If length is 6 width must be $6 \div 3 = 2$

$$\text{Area} = 2 \times 6 = 12\text{cm}^2$$

$$\text{Perimeter} = 6 + 6 + 2 + 2 = 16\text{cm}$$

[5]

17. The pie chart shows the after school activities of 36 students at Warwick College.



(a) Which is the most common activity among the students at the college?

Football

[1]

(b) How many students have music as an after school activity?

Total: 36 Students

Music: 25%

$$25\% \text{ of } 36 = \frac{1}{4} \text{ of } 36 = \frac{36}{4} = 9 \text{ students}$$

[2]

18. (a) List the factors of 18
1,2,3,6,9,18

1 mark – at least one correct pair
2 marks – all correct except for one pair
2 marks – all correct with one additional term

[3]

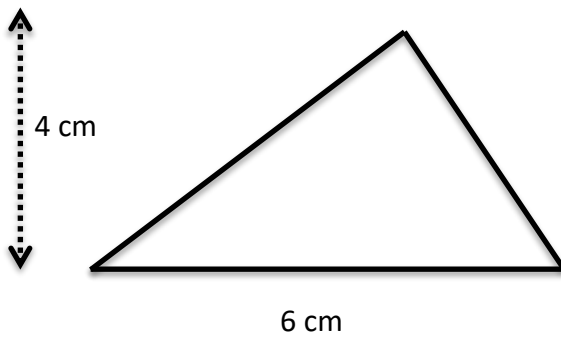
(b) List the multiples of 8 that are less than 35.

8,16,24,32

1 mark – missing one
1 mark – all correct with one additional term

[2]

19. Work out the area of this triangle.



$$Area = \frac{6 \times 4}{2}$$

$$\frac{24}{2} = 12cm^2$$

[2]

20. Round the following numbers:

(a) 123 (to the nearest ten)120.....

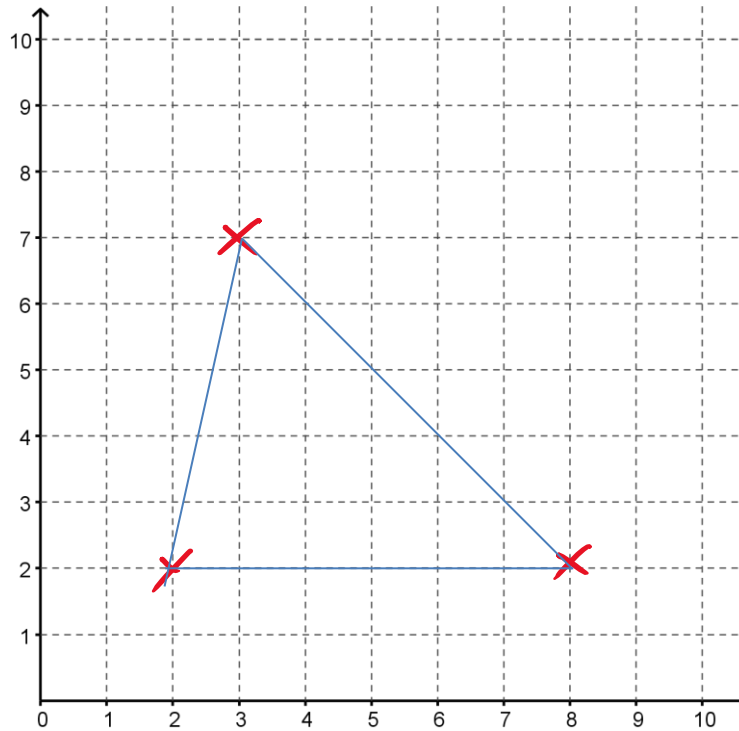
(b) 0.47 (to the nearest tenth)0.5.....

(c) 47100 (to the nearest ten thousand)47000.....

(d) 34.6 (to the nearest whole number)35.....

[4]

21. (a) Plot the points (2,2), (8,2), (7,7) and (3,7) and join them up to make a shape.



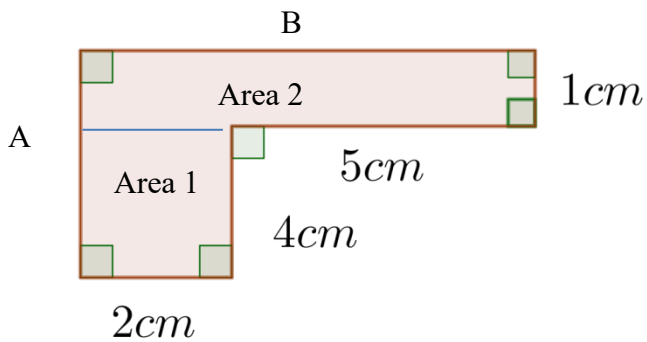
[2]

- (b) What name is given to this shape?

Scalene

[1]

22. Find the perimeter and area of this shape.



$$\text{Side A: } 4 + 1 = 5\text{cm}$$

$$\text{Side B: } 2 + 5 = 7\text{cm}$$

$$\text{Area 1} = 2 \times 4 = 8\text{cm}^2$$

$$\text{Area 2} = 7 \times 1 = 7\text{cm}^2 \rightarrow \text{Total Area} = 7 + 8 = 15\text{cm}^2$$

$$\text{Perimeter} = 2 + 4 + 5 + 1 + 7 + 5 = 24\text{cm}$$

[5]

23. Calculate 40% of €280.

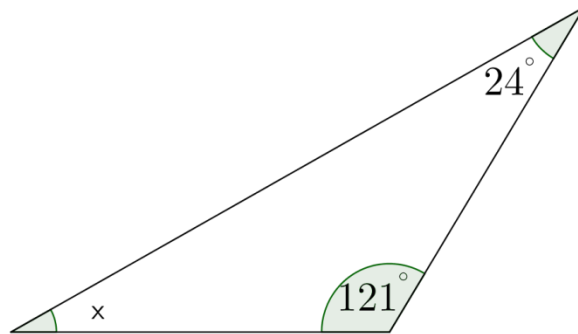
$$10\% \text{ of } 280 = 28$$

$$40\% \text{ of } 280 = 28 \times 4 = 112$$

$$\begin{array}{r} 3 \\ \times 28 \\ \hline 112 \end{array}$$

[2]

24. Find x.

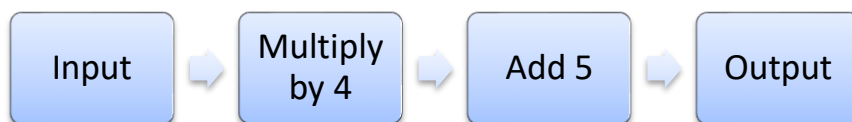


$$121 + 24 = 145^\circ$$

$$180^\circ - 145^\circ = 35^\circ$$

[3]

25.



(a) If the input is 3, what is the output?

$$3 \times 4 + 5 = 12 + 5 = 17$$

[1]

(b) If the output is 33, what is the input?

$$() \times 4 + 5 = 33$$

$$() \times 4 = 28$$

$$() = 7$$

[2]

(c) If the input is x, what is the output?

$$(x) \times 4 + 5$$

$$= 4x + 5$$

[2]

26. A dice has numbers from 1 to 6. If it is rolled once, what is the probability of each of these outcomes?

(a) Rolling a 5

$$\frac{1}{6}$$

(b) Rolling a number greater than 2

$$\frac{4}{6} = \frac{2}{3}$$

(c) Rolling a number less than 7

$$\frac{6}{6} = \mathbf{1 \text{ (certain)}}$$

(d) Rolling a number that is a multiple of 8

$$\mathbf{0}$$

[4]

27. Evaluate $a - bc$ if $a = 11$, $b = 4$ and $c = 2$

$$11 - 4 \times 2$$

$$11 - 8 = 3$$

[3]

28. In magic squares, the numbers in every row, column and the two diagonals add up to the same number. Complete the missing numbers and find the sum of the missing numbers.

2	7	6
	5	

[4]

END OF PAPER