



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

The American Academy Nicosia

Sample 4 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.

Question 1:

Find $\frac{5}{7}$ of 560

$$\frac{5}{7} \times \frac{560}{1} = \frac{5}{1} \times \frac{80}{1} = 5 \times 80 = 400$$

Answer:400.....[2]

Question 2:

Calculate $279 + 456$

$$\begin{array}{r} 1 \ 1 \\ 2 \ 7 \ 9 \\ + 4 \ 5 \ 6 \\ \hline 7 \ 3 \ 5 \end{array}$$

$$= 735$$

Answer:[2]

Question 3:

Calculate $416 - 273$

$$\begin{array}{r} 3 \ 11 \\ 4 \ 1 \ 6 \\ - 2 \ 7 \ 3 \\ \hline 1 \ 4 \ 3 \end{array}$$

$$= 143$$

Answer:[2]

Question 4:

Calculate 734×5

$$\begin{array}{r} 3 \ 1 \ 2 \\ 7 \ 3 \ 4 \\ \times \quad \quad \quad 5 \\ \hline 3 \ 6 \ 7 \ 0 \end{array}$$

$$= 3670$$

Answer:[2]

Question 5:

Calculate $3528 \div 9$

$$\begin{array}{r} 392 \\ 9 \overline{) 3528} \\ \underline{27} \\ 82 \\ \underline{81} \\ 18 \\ \underline{18} \\ 0 \end{array}$$

Answer:392.....[2]

Question 6: Find the next two numbers in the these sequences

a) 4, 8, 12, 16, ...20..... , ...24.....

b) 37, 31, 25, 19, ...13..., ...7...

[4]

Question 7:

Calculate

a) $\frac{7}{11} + \frac{3}{11}$

Answer: $\frac{10}{11}$[1]

b) $\frac{24}{35} \square \frac{7}{36}$

$$\frac{\cancel{24}^2}{\cancel{35}_5} \times \frac{\cancel{7}^1}{\cancel{36}_3} = \frac{2}{5} \times \frac{1}{3} = \frac{2}{15}$$

Answer:[2]

c) $\frac{3}{16} \square \frac{9}{8}$

$$\frac{\cancel{3}^1}{\cancel{16}_2} \times \frac{\cancel{9}^3}{\cancel{8}_3} = \frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$$

Answer:[2]

Question 8: Convert the following into decimal form:

a) 58 %

Answer:0.58.....[1]

b) $\frac{7}{20} = \frac{7 \times 5}{20 \times 5} = \frac{35}{100} = 0.35$

Answer:[1]

c) $\frac{16}{1000}$

Answer:0.016.....[1]

Question 9:

Sharron took the train from Birmingham at 10:55 and arrived in London at 13:20.

How long was the journey?

10:55 until 12:55 = 2 hours

12:55 until 13:00 = 5 minutes

13:00 until 13:20 = 20 minutes

2 hours 25 minutes

Answer:2.....hours25.....minutes[2]

Question 10:

Find the value of x from the following equation.

$$x - 27 = 58$$

$$x = 58 + 27$$

$$x = 85$$

Answer:85.....[2]

Question 11:

Calculate the following:

(a) $23.7 \times 100 = 2370$

(b) $387 \div 100 = 3.87$

(c) $10.89 \times 10 = 108.9$

[3]

Question 12:

30% of the 150 students in a school are girls. How many boys are in the school?

10% of 150 = 15

30 % of 150 = $3 \times 15 = 45$

45 girls \rightarrow $150 - 45 = 105$ boys

Answer:[3]

Question 13:

If, $x = 6$, $y = 2$ and $z = 14$ calculate the following:

$$\begin{aligned} z + y \times x \\ 14 + 2 \times 6 \\ 14 + 12 = 26 \end{aligned}$$

Answer:26.....[3]

Question 14:

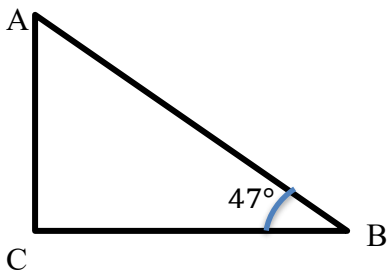
I think of a number, I multiply it by 7 and then I subtract 14. I find 70. What is my number?

$$\begin{aligned} () \times 7 - 14 &= 70 \\ () \times 7 &= 84 \\ () &= 12 \end{aligned}$$

Answer:[2]

Question 15:

Below you are given a right-angle triangle. Angle B is 47° . Find the size of angle A.



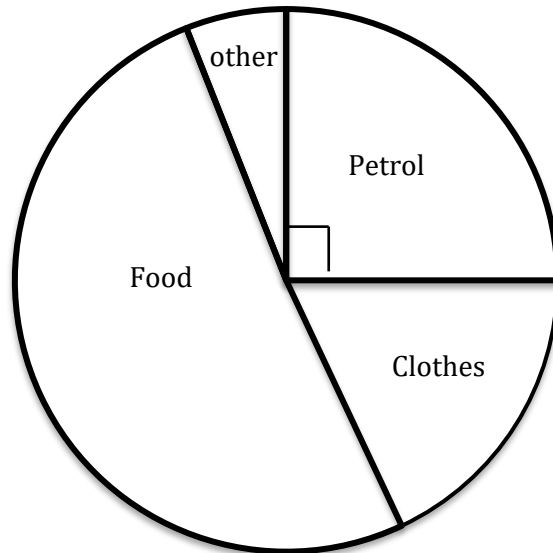
$$\begin{aligned} C &= 90^\circ \\ B + C &= 90 + 47 = 137 \\ A &= 180 - 137 \\ A &= 43^\circ \end{aligned}$$

Answer:[3]

Question 16:

Mrs. Yusuf went shopping at a superstore.

The pie chart shows information about the money she spent on petrol, on clothes, on food and on other items.



(a) What did she spend most money on?

.....Food.....[1]

(b) What fraction of the money she spent was on petrol?

..... $\frac{1}{4}$[1]

Mrs. Yusuf spent £25 on petrol at the superstore.

(c) In total, how much money did she spend?

$$\frac{1}{4} = £25 \rightarrow \text{Total } 25 \times 4 = £100$$

.....[2]

Question 17:

Work out the following

(a) $14 - 3 \times 4 - 2 =$

$$14 - 12 - 2 = 0$$

Answer:[3]

(b) $6^2 - (3 \times 7 - 7) =$

$$= 36 - (21 - 7)$$

$$= 36 - 14$$

$$= 22$$

Answer:[4]

(c) $400 \div 100 \times 5 - 2 =$

$$= 4 \times 5 - 2$$

$$= 20 - 2$$

$$= 18$$

Answer:[3]

Question 18:

Given the following set of numbers

17, 18, 19, 20, 21, 22, 23, 24, 25

List all

(a) the prime numbers

Answer:17, 19, 23.....[3]

(b) the multiples of 4

Answer:20, 24.....[2]

Question 19:

Sarah went to a sweetshop and bought, 3 chocolate bars costing €1.15 each and 2 packs of wine gums costing 85 cent each.

(a) How much did she pay?

$$\begin{aligned} &= 3 \times \text{€}1.15 + 2 \times \text{€}0.85 \\ &= 3.45 + 1.70 \\ &= \text{€}5.15 \end{aligned}$$

Answer:[3]

(b) How much change does she get from a €20 note?

$$\begin{aligned} &= 20.00 - 5.15 \\ &= \text{€}14.85 \end{aligned}$$

$$\begin{array}{r} 19.90 \\ - 5.10 \\ \hline 14.80 \end{array}$$

$$= 14.85$$

Answer:[2]

Question 20:

Change 0.36 to a fraction leaving your answer in its simplest form.

$$\frac{36}{100} = \frac{9}{25}$$

Answer: $\frac{9}{25}$ [2]

Question 21:

Jasmine needs 28 minutes to bake a cake. How many cakes can she bake in 2 hours and 20 minutes?

- First Cake: 28 minutes
- Second Cake: 56 minutes
- Third Cake: 1 hour 24 minutes
- Fourth Cake: 1 hour 52 minutes
- Fifth Cake: 2 hours 20 minutes

Answer:5.....[3]

Question 22:

The temperature at midnight was said to be 12 °C less than the temperature at midday. At midday it was 7 °C. What was the temperature at midnight?

$$7 - 12 = -5^{\circ}C$$

Answer:[2]

Question 23:

Round the following numbers accordingly:

(a) 3456 (to the nearest hundred)3500.....

(b) 931546 (to the nearest thousand)932 000.....

(c) 9.63 (to the nearest whole number)10.....

[3]

Question 24:

A coat costs €75. The store adds on a discount of 30%. How much is the new sale price of the coat?

$$\begin{aligned}
&10\% \text{ of } \text{€}75 = \text{€}7.50 \\
&30\% \text{ of } \text{€}75 = \text{€}22.50 \\
&\text{Reduced by } 30\% \\
&\text{€}75 - \text{€}22.50 = \text{€}52.50
\end{aligned}$$

$$\begin{array}{r}
 \\
 \\
- \\
\hline

\end{array}$$

Answer:[3]

Question 25:

Put the following numbers in order, starting from the smallest.

$20\% \text{ of } 75 \quad 5 \times 4 \quad 63 \div 7 \quad 0.17 \times 100$

$15 \quad 20 \quad 9 \quad 17$

$63 \div 7, 20\% \text{ of } 75, 0.17 \times 100, 5 \times 4$

Answer:[5]

Question 26:

George saves €840 per month. $\frac{2}{7}$ of his savings he saves to buy a car, $\frac{1}{7}$ he saves to buy clothes and the rest he is saving to buy a house.
Calculate the following:

(a) How much money does he save per month to buy a car?

$$\frac{2}{7} \times \frac{840}{1} = \frac{2}{1} \times \frac{120}{1} = \text{€}240$$

Answer: [2]

(b) How much money does he save per month to buy a house?

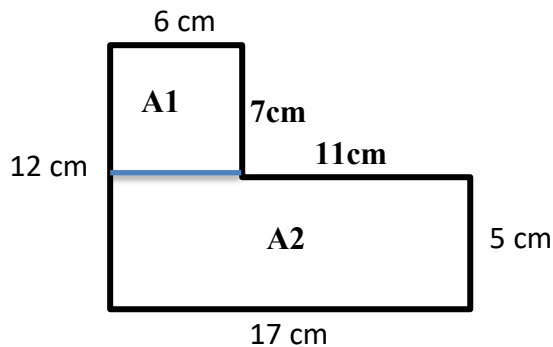
$\frac{4}{7}$ of 840 towards house

$$\frac{4}{7} \times \frac{840}{1} = \frac{4}{1} \times \frac{120}{1} = \text{€}480$$

Answer: [3]

Question 27:

Find the area and the perimeter of the following shape.



Area

$$A1 = 6 \times 7 = 42\text{cm}^2$$

$$A2 = 5 \times 17 = 85\text{cm}^2$$

$$\text{Total Area} = 42 + 85 = \mathbf{127\text{cm}^2}$$

Perimeter

$$P = 5 + 17 + 12 + 6 + 7 + 11$$

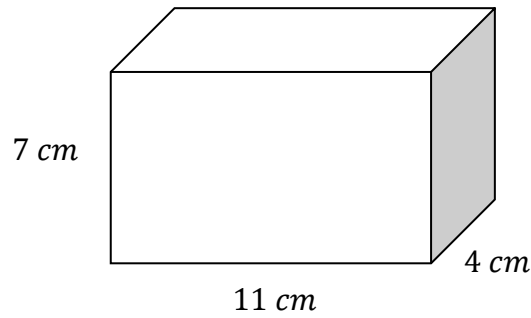
$$\mathbf{P = 58\text{cm}}$$

Area: cm^2 [3]

Perimeter: cm [3]

Question 28:

Calculate the volume of this rectangular solid.



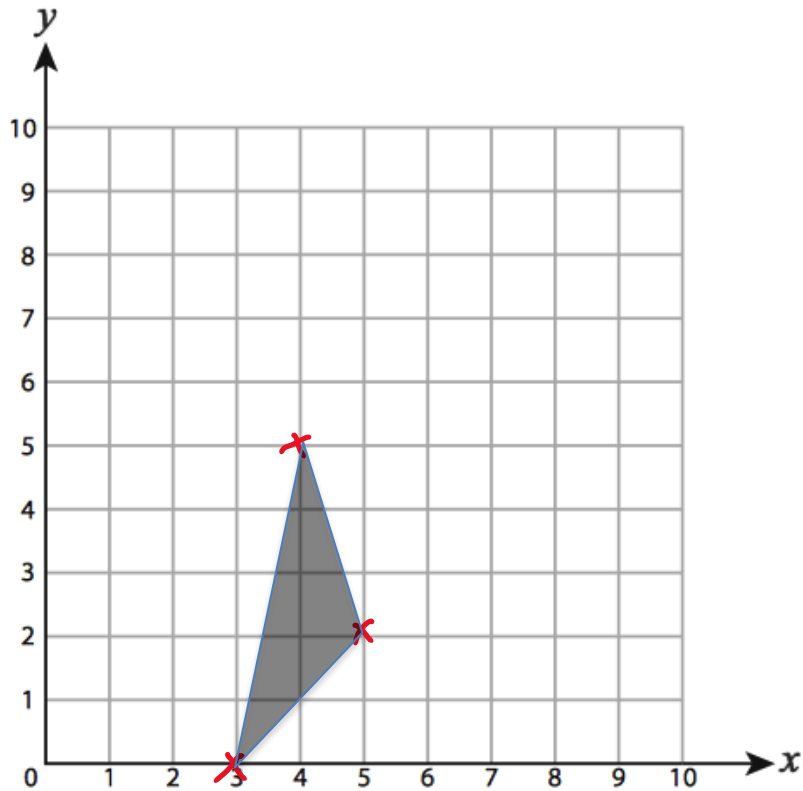
$$\begin{aligned} \text{Volume} &= 7 \times 11 \times 4 \\ V &= 77 \times 4 \\ V &= \mathbf{308\text{cm}^3} \end{aligned}$$

Answer: cm^3 [2]

Question 29:

On the graph below, shade the area that is enclosed by the following points:

A(5, 2), B(4, 5), C(3,0)



1 mark for 2 correct points

[2]

Question 30:

A fair dice is thrown once. Calculate the following probabilities, giving your answer in its simplest form.

(a) 2 is obtained

Answer: $\frac{1}{6}$ [1]

(b) An even number is obtained

Answer: $\frac{3}{6} = \frac{1}{2}$ [1]

(c) A square number is obtained

Answer: $\frac{2}{6} = \frac{1}{3}$ [1]

END OF PAPER