








Contents



sample

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Find the average of each group of numbers.

1. 16, 22, 19, 27

Average = _____

Note Average = Sum of data \div Number of data

2. 120, 0, 134, 226, 170

Average = _____

3. 1.8, 3.9, 3.9, 2.6, 3.9, 4

Average = _____

Solve the problems. Show your working.

4. Matt got 74, 80, 75 and 97 in four dictations. What is the average mark of these four dictations?



5. Tracy spent 7.8 dollars each day from Monday to Wednesday, and 0 dollars and 6.6 dollars on Thursday and Friday respectively. During these five days, how much did she spend every day on average?

6. A convenience store sold 18.5 boxes of chocolate bars on average per month from January to March and 16.1 boxes on average per month from April to August. What is the average number of boxes of chocolate bars sold per month during these eight months?

7. Mr. Li bought three books at an average price of 98 dollars each. Two of the books cost 100 dollars and 85 dollars respectively. How much did the remaining book cost?

8. The average height of 9 scouts was 1.47 m. Another scout whose height is 1.57 m joined them later. What is their average height now?

Exam Tips

Addition or removal of data will change the sum and the number of data.

9. 42 28.4 52 $37\frac{3}{5}$ 70

Exam Tips

Change the fraction into a decimal before calculation.

The average of the above five numbers is _____.

10. Harry wanted to buy some biscuits in a convenience store. The prices of four packs of biscuits are as follows:

\$12 \$10 \$15 \$13

Harry bought the **three cheapest packs of biscuits** above. The average price of the packs of biscuits he bought was \$ _____. (Give your answer correct to 1 decimal place)

11. (a) Mrs. Wong bought 3 pairs of pyjamas. The average price for each pair was _____ dollars.

- (b) Mrs. Fong bought 5 pairs of pyjamas. Each pair was _____ dollars less on average.

• • Pyjamas on sale • •



Original price per pair \$128

The 1st pair	\$128
The 2nd pair	\$39 less
The 3rd pair or further	\$63 less per pair

Advanced Level

12. There are five examinations in this term. Full marks for each subject is 100. The following are Helen's results in different subjects.

Subject	Chinese	English	Mathematics	General Studies	Moral Education
Result	95	90	94	93	98

- (a) According to the above table, Helen's result in _____ is exactly the same as the average mark of the five examinations.
- (b) Lily's results in four of the subjects are 92, 94, 85 and 96 respectively. Could her average mark for the five examinations be higher than Helen's? Explain.

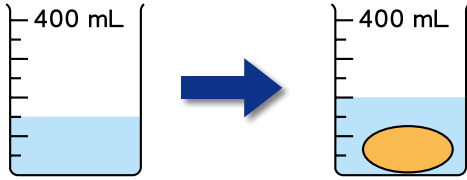


Answer: Lily's average mark for the five examinations ❖ could / could not be higher than Helen's. (❖ Circle the answer)

Reason: _____

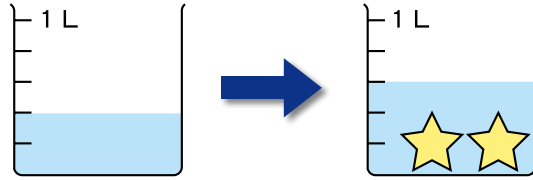
 Write the volumes of the objects on the _____ .

1.



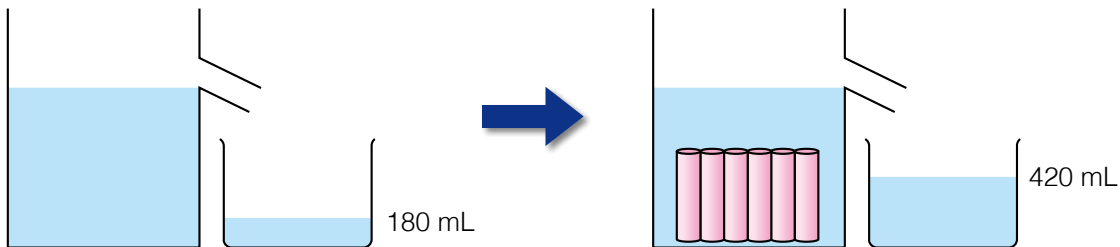
Volume of  : _____ cm^3

2.



Volume of one  : _____ cm^3

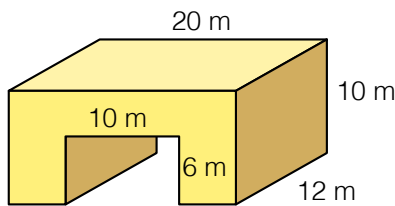
3.



Volume of one  : _____ cm^3

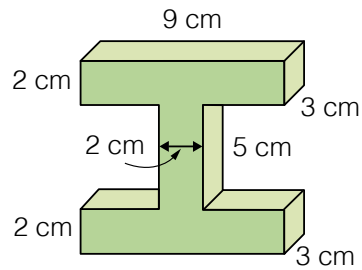
 Find the volumes of the 3-D shapes.

4.



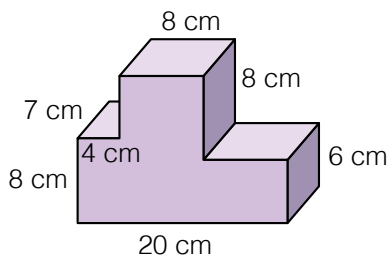
_____ m^3

5.



_____ cm^3

6.



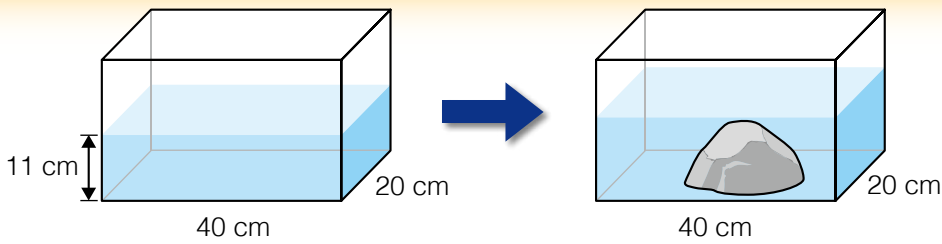
_____ cm^3

Note

Method ①: Dissect the 3-D shape into different cuboids and calculate the sum of volumes of the cuboids.


Method ②: Fill up the 3-D shape with some small cuboids to form a large cuboid. Then subtract the volumes of the small cuboids from the volume of the large cuboid.

7.



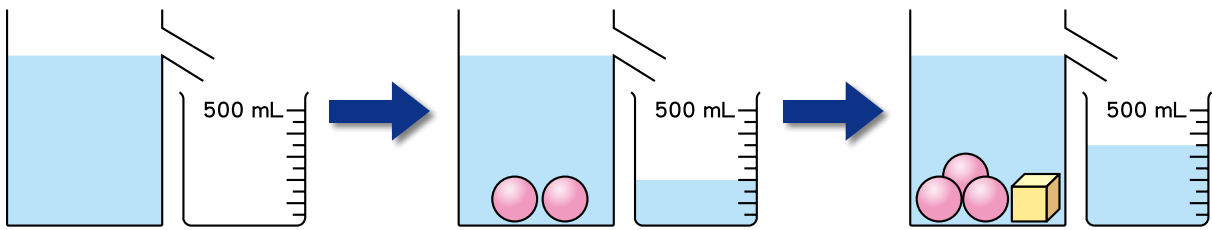
Exam Tips

Do not confuse the change in water level with the new depth of the water.

After putting a piece of  whose volume is 2000 cm^3 into the water tank above, what is the new depth of the water?

Answer: The new depth of the water is _____ cm.


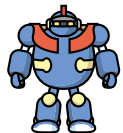
8.



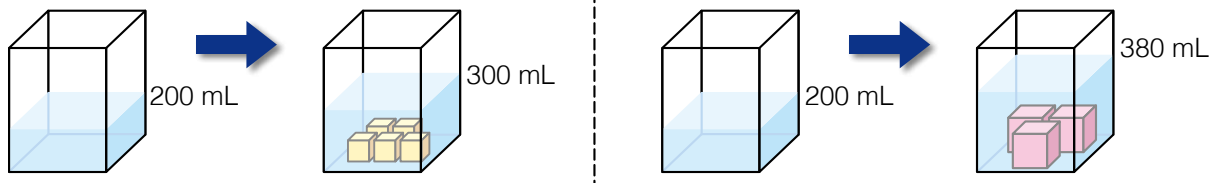
(a) The volume of one  is _____ cm^3 .

(b) The volume of one  is _____ cm^3 .

Advanced Level

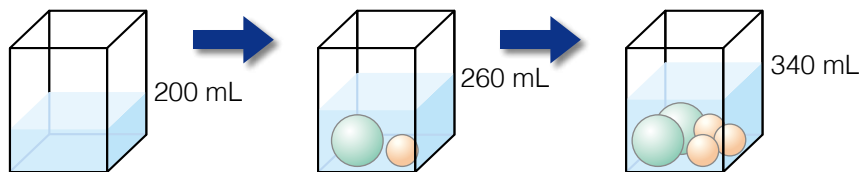
9. The capacity of a tank was 4000 mL. $\frac{3}{4}$ of it was filled with water. After a  was immersed in the water, 400 mL of the water overflowed. The volume of the  was _____ cm^3 .

10.



According to the pictures above, the volume of a large block is _____ times that of a small block.

11.



According to the pictures above, the volume of a large marble is _____ cm^3 .

Analysis of Common Questions in Public Exam

Calculation

(Exercise 1 – Q3)

1. $4.59 \div 10 =$ _____

(Exercise 2 – Q1)

2. $36.54 \div 4.2 =$ _____

(Exercise 3 – Q2)

3. $22 - (4.7 + 3.82) \div 2.4 =$ _____

Smart Tactics

If the dividend is smaller than the divisor, put a '0' in the units place of the quotient.

Smart Tactics

Pay attention to the position of the decimal point of the answer.

Smart Tactics

Note that the bracketed part should be calculated first, and remember to 'do the multiplication or division first, then the addition or subtraction'.

Sequencing

(Exercise 14 – Q8)

4. Arrange the following numbers from the largest to the smallest.

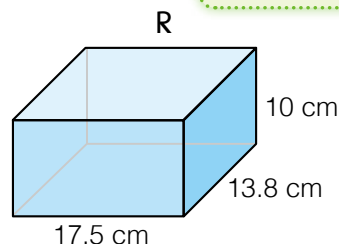
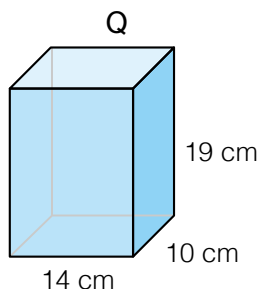
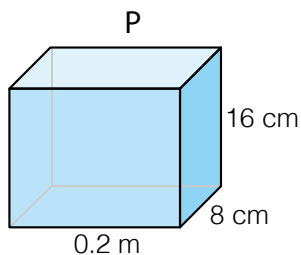
Smart Tactics

When arranging percentages, fractions and decimals, it would be more convenient for comparison to change all the numbers into decimals first.

Answer: _____ , _____ , _____
(largest) (smallest)

(Exercise 15 – Q7a)

5. Arrange the three tanks below according to their capacities from the smallest to the largest.



Smart Tactics

Note that the unit of the length of tank P is 'm'. Remember to unify the units before calculating the capacities.

Answer: Tank _____ , tank _____ , tank _____
(smallest) (largest)

Analysis of Common Questions in Pre-S1

Multiple choice (Section A)

(Exercise 2 – Q12)

1. When Kary was calculating $1.36 \div 0.7$, she wrongly wrote the expression as $136 \div 7$. How many times of the correct answer is her answer? (Write the letter next to the answer in the)

- A. 0.01
- B. 0.1
- C. 10
- D. 100

Smart Tactics

Make use of expansion or moving the decimal point to change the divisor '7' and the dividend '136' to '0.7' and '13.6' respectively. Then, compare it with the correct answer.

(Exercise 13 – Q15)

2. Which of the following equals $1\frac{4}{5}\%$?

(Write the letter next to the answer in the)

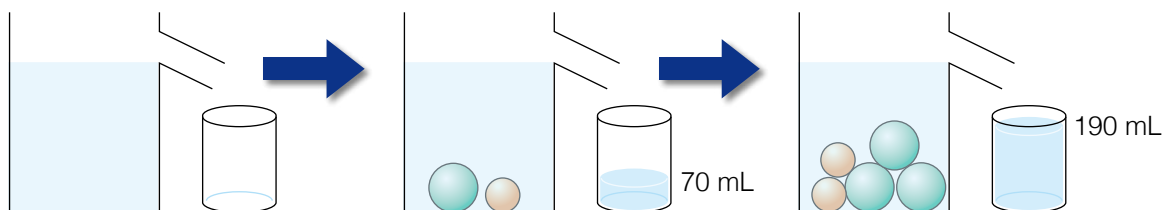
- A. 0.008
- B. 0.018
- C. 0.18
- D. 0.8

Smart Tactics

Change the fraction ' $1\frac{4}{5}$ ' into a decimal first. Then move the decimal point 2 places to the left, and add '0's in appropriate places, and then remove the percentage symbol.

(Exercise 16 – Q11)

3. Joe puts some marbles into the overflow can.



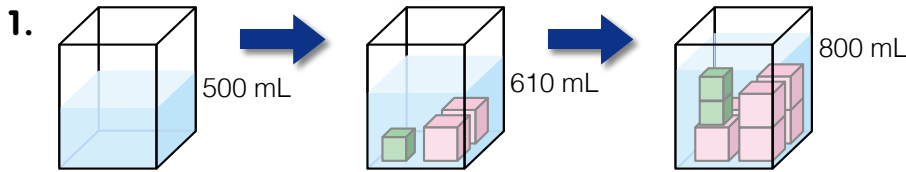
What is the volume of one small marble?

(Write the letter next to the answer in the)

- A. 20 cm^3
- B. 30 cm^3
- C. 40 cm^3
- D. 50 cm^3

Smart Tactics

You can substitute one of the options into the second picture to find the volume of a large marble first. Then, substitute the volumes of the two types of marbles into the third picture to see if the total volume equals 190 cm^3 . If not, try to substitute other options.



! Mind the Trap
The question involves cubes of two different sizes. Students fail to find their volumes accordingly.

In the above pictures, what is the volume of a small cube? (Write the letter next to the answer in the)

- A. 20 cm^3 B. 30 cm^3 C. 40 cm^3 D. 50 cm^3

Sorting It Out

You can try to substitute each option into the second picture and compare it with the first picture to find the volume of a large cube. Then, substitute the volumes of the two types of cubes into the third picture to see if the total volume of the cubes and the water equals 800 cm^3 .

Option A: Assume that the volume of a small cube is 20 cm^3 .

$$(610 - 500 - 20) \div 2 = 45, \text{ so the volume of a large cube is } 45 \text{ cm}^3.$$

$$500 + 20 \times 2 + 45 \times 6 = 810, \text{ so the total volume of the third picture would be } 810 \text{ cm}^3, \text{ which is not consistent with the information in the question.}$$

Option B: Assume that the volume of a small cube is 30 cm^3 . The volume of a large cube would be 40 cm^3 , and the total volume in the third picture would be 800 cm^3 .

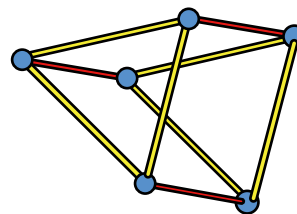
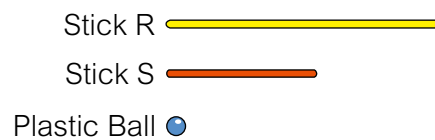
Option C: Assume that the volume of a small cube is 40 cm^3 . The volume of a large cube would be 35 cm^3 . The result is unreasonable, so option C is not the answer.

Option D: Assume that the volume of a small cube is 50 cm^3 . The volume of a large cube would be 30 cm^3 . The result is unreasonable, so option D is not the answer.

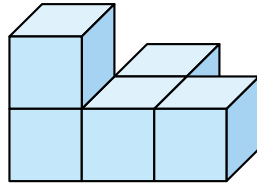
(Exercise 4 – Q14)

2. Kenneth used the following sticks of different lengths and plastic balls to make the 3-D shape on the right. If he wants to change it into a pyramid on a regular 7-sided base, how many more of each type of materials will be needed at least? (Write the letter next to the answer in the)

	Stick R	Stick S	Plastic Ball
A.	1	1	2
B.	3	2	1
C.	1	4	2
D.	2	2	1

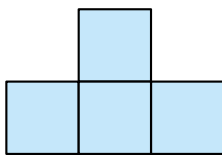


1

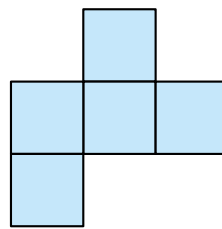


Study the above 3-D shape. Which of the following shows the shape when looking at it from above? Circle the letter for the answer.

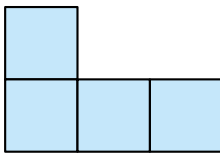
A.



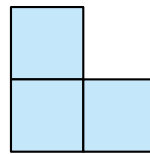
B.



C.



D.



2

In Figure 1, when the cube is cut along the green lines, the shape of the section obtained is a square. Add some straight lines to Figure 2, so that when the cube is cut along these lines, the shape of the section obtained will be a trapezium.

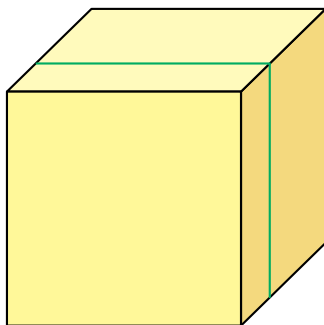


Figure 1

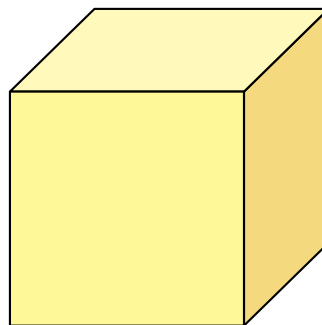


Figure 2