Free
for all students

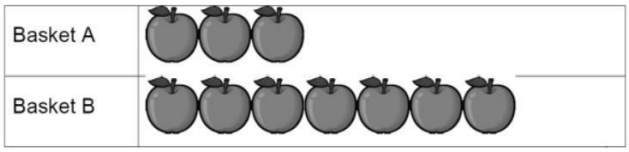
SINGAPORE MATH CHALLENGE

INFO PACK 2023 INTERNATIONAL

SMC Sample Questions

Kindergarten 2 (Grades K2)

Q1 10 apples are placed into 2 baskets.



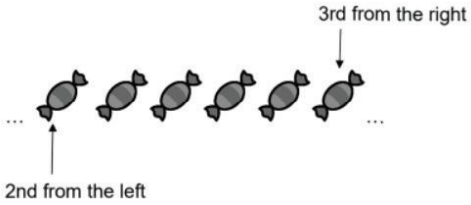
How many apples must be moved from basket B to basket A so that both baskets will have the same number of apples?

Answer : _____apples

Q2 Study the pattern below.
What is the missing number?

Answer : _____

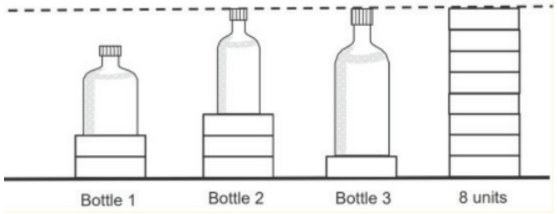
Q3 A number of sweets are arranged in a row as shown below.



How many sweets are there altogether?

Answer : _____ sweets

Q4 Study the picture below.



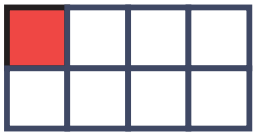
Each ☐ is 1 unit.
What is the total height of Bottle 2 and Bottle 3 in units?

Answer : units

SMC Sample Questions

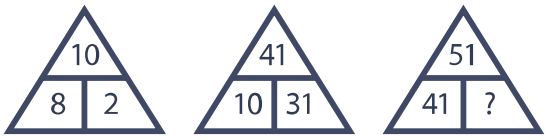
Primary 1 & 2 (Grades 1 & 2)

Q1 In the figure below, one part of it is already shaded. How many more parts of the figure must be shaded so that 3/8 of it is shaded?



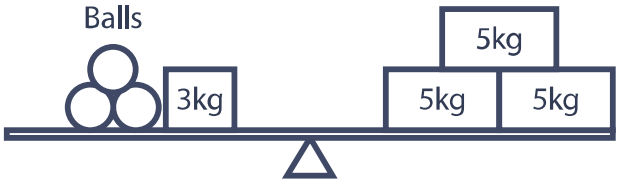
Answer : _____parts

Q2 Look at the number pattern. What is the missing number?



Answer : _____

Q3 Find the mass of one ball. (3 marks)



Answer : _____ kg

Q4 Ali bought some sweets. If he packs them equally into 4 jars, he will have 3 sweets left. If he packs them equally into 5 jars, he will have 1 sweet left. What is the least possible number of sweets Ali bought? (4 marks)

Answer : _____ sweets

Q5 Anthony and Alvin had the same amount of money. Alvin spent all his money on a story book while Anthony bought a T-Shirt for $12 and had $3 left. How much did the two boys have altogether at first? (5 marks)

Answer : $ _____

Q6 Study the pattern below. How many circles will there be in pattern 5?

Answer : _____ circles

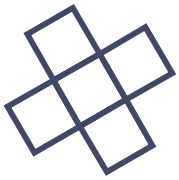
SMC Sample Questions

Primary 3 & 4 (Grades 3 & 4)

Q1 ★ × ★ = 16,
48 ÷ ★ = =
Find the value of =.

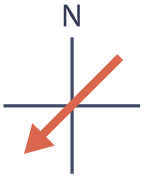
Answer : _____

Q2 The figure below is made up of 5 identical squares. The perimeter of the figure is 96cm. What is the area of each square?



Answer : _____ cm^2

Q3 The arrow shows the direction Mr Sofian is facing. He turns 135° anti-clockwise. In which direction is he facing now? (2 marks)



Answer : _____

Q4 There are some birds in three trees. 3 birds flew from the first tree to the second tree. 2 birds flew from the second tree to the third tree. After this, there were 5 birds in each tree. How many birds were there in each tree at first? (3 marks)

Answer : _____ birds

Q5 A tank, a pail and a bottle can hold a total 52 litres of water. The pail can hold 8 litres more water than the bottle. The tank can hold 4 times as much water as the pail. How much water can the bottle hold? (5 marks)

Answer : _____ litres

Q6 The cost of 1 storybook and 3 similar pens is $7. The cost of 3 storybooks, 9 pens and 2 files is $25.40. What is the cost of a file?

Answer : $ _____

SMC Sample Questions

Primary 5 & 6 (Grades 5 & 6)

Q1 The table below shows the marks obtained by five students for their Mathematics test. How many student(s) obtained more than the average mark of the group?

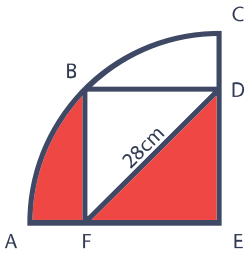
Name of students	Marks obtained
Ashykin	40
Benson	31
Charles	42
Devi	45
Eng Hui	27

Answer : _____

Q2 In the figure below, AB is 20cm. B is the midpoint of AC, C is the midpoint of BD and D is the midpoint of BE. What is the length of AE?

Answer : _____cm

Q3 The figure below is formed by a square BDEF and a quadrant. Given that DF = 28cm, find the total area of the shaded parts. (Take $\pi = 22/7$) (3 marks)



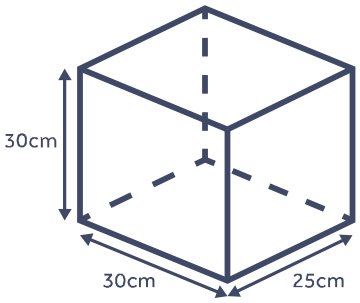
Answer : _____cm^2

Q4 Tim had $1060 more than Cory. After Tim gave 4/9 of his money to Cory, they each had the same amount of money. How much money did Corey have at first? (4 marks)

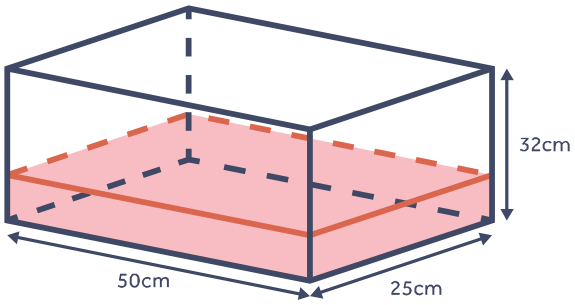
Answer : $ _____

SMC Sample Questions

Q5 Two rectangular tanks are shown below. At first Tank A was empty and 1/4 of Tank B was filled with water. Both taps were turned on at the same time and water from both taps flowed at the same rate of 1.5 litres per minute. How long did it take for the height of water to be the same in both tanks?
(1 litre = 1000cm^3) (5 marks)



Tank A



Tank B

Answer : _____

Q6 Henry bought some chocolates and gave half of them to Wen Jie. Wen Jie bought some sweets and gave half of them to Henry. Henry ate 15 sweets and Wen Jie ate 18 chocolates. After that, the number of sweets and chocolates Henry had were in the ratio 1:7 and the number of sweets and chocolates Wen Jie had were in the ratio of 1:4. How many sweets did Wen Jie buy?

Answer : _____ sweets

SMC Sample Questions

Secondary 1 & 2 (Grades 7 & 8)

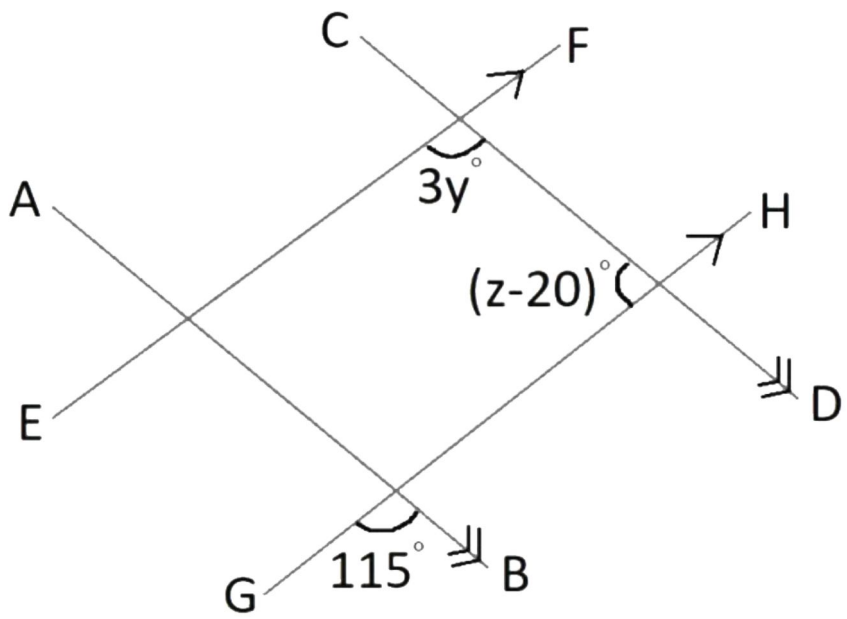
Q1 Consider the numbers stated below:

$$-10, \frac{1}{4}, \sqrt{\frac{1}{9}}, 1, 2.\dot{2}\dot{2}, \frac{22}{7}, \pi, \sqrt{16}, 5, \sqrt[3]{216}, \sqrt{60}, \sqrt[3]{729}, \sqrt{729}$$

Write down the perfect squares and irrational numbers and compute its sum. Round off the answer to the nearest whole number.

Answer : _____

Q2



In the figure above, AB is parallel to CD and EF is parallel to GH. Find the sum of y and z. Round off the answer to the nearest degree.

Answer : _____

Q3 Solve the simultaneous equations and find the sum of p and q.

$3p+2q=18$
$5p=7q-1$

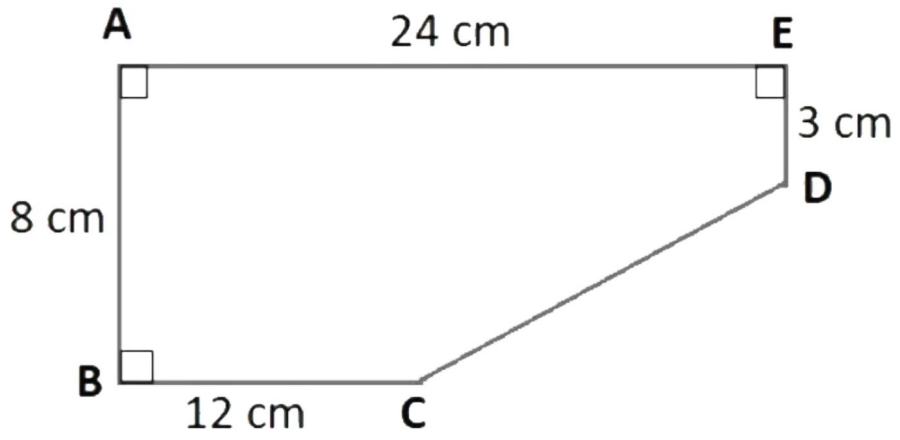
Answer : _____

Q4 Billy jogs for $(2x-4)$ hours at a speed of $(x+2.5)$ km/h. The total distance jogged is 18 km. Find the distance Billy has cycled in kilometers.

Answer : _____

SMC Sample Questions

Q5 Calculate the area of the figure ABCDE, in centimetres.



Answer : _____

Q6 The table below shows the number of siblings that 40 students have.

Number of siblings	0	1	2	3	4	5
Number of students	10	6	x	8	y	4

If the median is given to be 2.5, find the mean of this distribution.
Multiply the mean by 100 and state the result.

Answer : _____

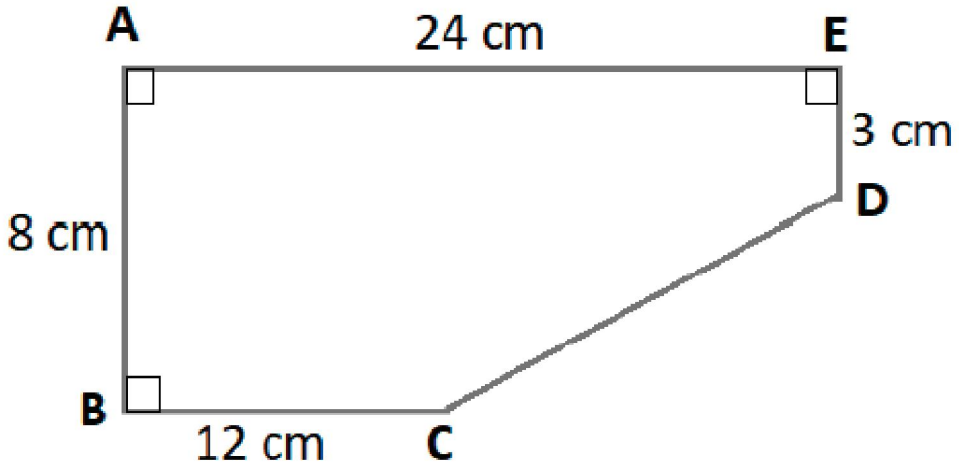
SMC Sample Questions

Secondary 3 (Grades 9)

Q1 Given that $9 - 4x^2 = (a + bx)(a - bx)$, $b > 0$. Find the value of a^b.

Answer : _____

Q2 Calculate the area of the figure ABCDE, in centimetres.



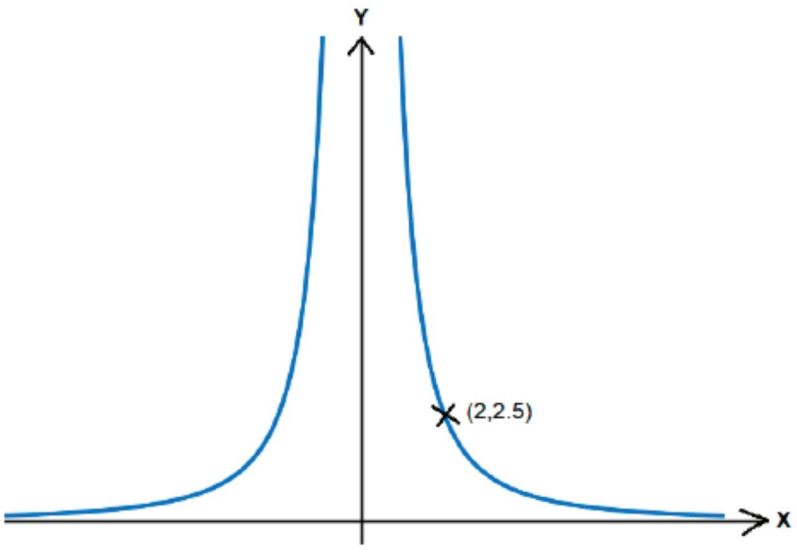
Answer : _____

SMC Sample Questions

Q3 Given that $2t = \frac{3p-4}{4-5p}$, when p is expressed in terms of t, $p = \frac{a+8t}{bt+c}$.
Find the sum of a, b and c.

Answer : _____

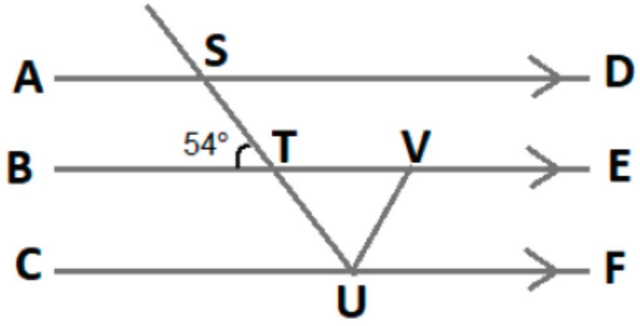
Q4 The diagram represents the graph of $y = ax^{-2}$ and passes through the point $(0.5, b)$.
Find the sum of a and b.



Answer : _____

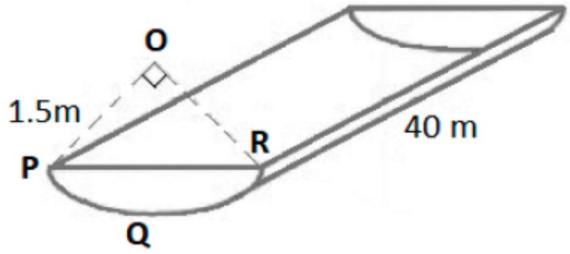
SMC Sample Questions

Q5 In the figure, AD, BE and CF are parallel lines.
S lies on line AD. T and V lies on line BE. U lies on line CF.
VU is the perpendicular bisector of $\angle TUF$.
Find $\angle TUV$.



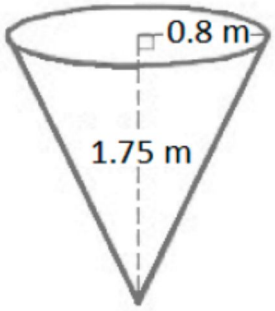
Answer : _____

Q6 Figure 1 shows an open trough, constructed by taking a slide of cylinder of radius $1.5\ m$ and length $40\ m$. The cross section of PQR is a segment of a circle. O is the centre of this circle and $\angle POR = 90°$.



[Figure 1]

Water is poured into the trough by using a conical bucket shown in Figure 2, which has a radius of $0.8m$ and height $1.75\ m$.



[Figure 2]

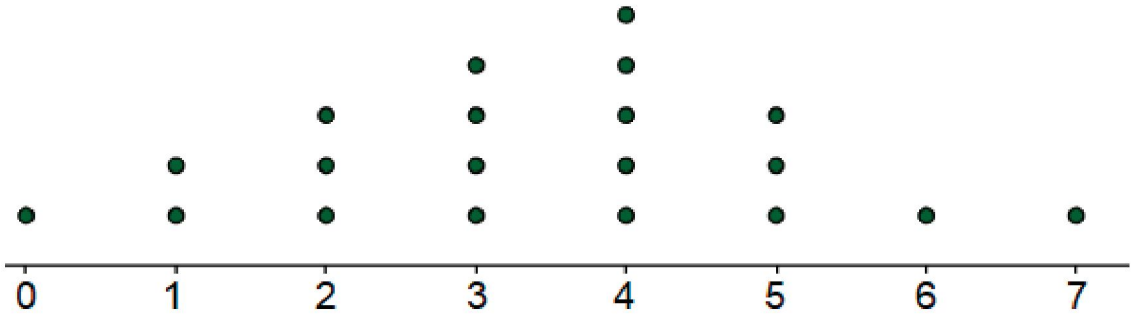
What are the minimum buckets that must be used?

Answer : _____

SMC Sample Questions

Secondary 4 (Grades 10)

Q1 The following data shows the number of books a group of students read in a year.



Find the percentage of students who read more than 3 books in a year.

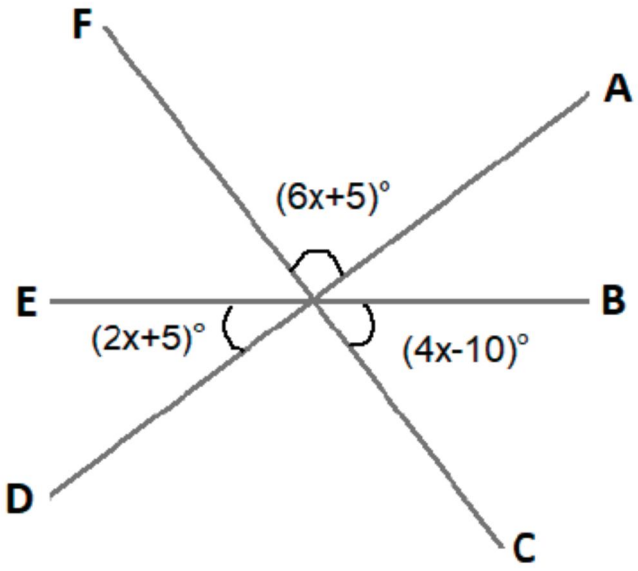
Answer : _____

Q2 . The area of Amazon Forest is $5.5\text{x}10^6\ km^2$ and is represented on a map by an area of $2500\ cm^2$. If the length of Amazon River is $6840\ km$ long, find the length, in cm, of the river in the map. Round off your answer to the nearest whole number.

Answer : _____

SMC Sample Questions

Q3 In the figure, AD, BE, and CF are straight lines. Find x.



Answer : _____

Q4 Below is a stem-and-left diagram for the mass, in kg, of the students in a class.

Stem	Leaf
4	4 5 6 6 7 8 9
5	0 1 2 3 4 4 5 6 6 7
6	1 1 2 3 4 4 4 4 5
7	0 1 3 5
8	0 4 5 8

Find the median mass, in kilograms.

Answer : _____

SMC Sample Questions

Q5 The table below shows the number of siblings that 40 students have.

Number of siblings	0	1	2	3	4	5
Number of students	10	6	x	8	y	4

If the median is given to be 2.5, find the mean of this distribution.
Multiply the mean by 100 and state the result.

Answer : _____

Q6 A catapult is shot from the top of a vertical building. Its position during its flight is represented by the equation $p = 34q - 2q^2 + 40$, where p metres is the height of the paper plane above the ground and q metres is its horizontal distance from the building.

Find out how far the catapult travels horizontally while its height is more than 100 metres. Round off the answer to the nearest whole number.

Answer : _____