

Despite COVID-19's interference, our Sakamoto Maths students persevered and emerged victorious!



Congratulations!



Achievement Level 2 to 4

- | | |
|------------------------|---------------------------|
| Cheam Kai Qi | South View Primary School |
| Eugene Lee Zheng Xuan | Poi Ching Primary School |
| Jayden Chung Yan Jie | Yew Tee Primary School |
| Chong Si Han Eylia | Bukit View Primary School |
| Darrius Goh Yang Cheng | Northoaks Primary School |
| Hua Yi Zoe | Bukit View Primary School |
| Jaslyn Chuah | Keming Primary School |
| Kelvin Nyein Htet Kyaw | Northoaks Primary School |

Achievement Level 1

- | | |
|-----------------------|----------------------------|
| Ariel Low | Palm View Primary School |
| Bryan Wong Hong Sheng | Red Swastika School |
| Jovelynn Kung Jielin | South View Primary School |
| Krystle Koh Wen Xuan | Nan Chiau Primary School |
| Remus Lim Yu Zhe | Mee Toh Primary School |
| Wong Yin Jit | North Vista Primary School |

All names listed above with full consent from students' parents.

A Maths Question, PSLE 2021

Kelly and Ivan had the same number of coins. Kelly had a number of 50-cent coins and 64 20-cent coins. These coins had a mass of 1.134 kg. Ivan had a number of 50-cent coins and 104 20-cent coins.

(a) Who has more money in coins and by how much?
 (b) Given that each 50-cent coin is 2.7 g heavier than a 20-cent coin, what is the mass of Ivan's coins in kilograms?

<< Gathering Difference Maths >>

<-Summary>

	Kelly	Ivan
50-cent coin	?	?
20-cent coin	64 coins	104 coins
Number of coins	1	1
Mass	1.134 kg	?

<-Diagram>

S/N	1	64	65	104	105	XXX
Kelly	50	...	50	...	50	1.134 kg
Ivan	50	...	50	...	50	? kg

<-Writing>

(a) The difference of value between them can be found from the 65th coins to the 104th coins as shown above.

104 - 64 = 40 (coins)
 50¢ - 20¢ = 30¢
 40 × \$0.30 = \$12.00

(b) From a mass of Kelly's coins, subtract the difference of a mass of those 40 coins. It gives you the mass of Ivan's coins. Difference of each coin is 2.7 g.

2.7 × 1000 = 0.0027 (kg) → unit conversion
 40 × 0.0027 = 0.108 (kg) → Difference of the 40 coins
 1.134 - 0.108 = 1.026 (kg) → Mass of Ivan's coins

Answer (a) Kelly has more than Ivan by \$12.00. (b) 1.026 kg

A Maths Question, PSLE 2021

A bookshelf can hold either 30 large books or 45 small books. Johnny stacked 3 large books and 23 small books in it. How many more large books can be stacked in the bookshelf at most?

<< Ratio >>

<-Diagram>

<-Writing>

Since 30 large books and 45 small books are in the same length, the ratio of one large book width to one small book width is

L : S = 45 : 30
 = ③ : ②

3 × ③ + 23 × ② = 69 → Occupied by 3 large books and 23 small books
 30 × ③ = 90 → Length of the bookshelf
 90 - 69 = 21 → Space left in the bookshelf
 21 ÷ ③ = 7
 7 + 3 = 10

Hence 11 more large books can be stacked.

Answer 11

A Maths Question, PSLE 2021

An empty water tank has an inner measurement of 55 cm × 20 cm × 30 cm. Water flows into the tank from Tap A while water flows out of the tank from Tap B at a constant rate each. At 2:00 p.m., Tap A started filling up the tank at a rate of 4.2 litres per minute. 5 minutes later, Tap B was turned on. At 2:15 p.m., the tank was half filled with water.

(a) What was the rate of water flowing out from Tap B?
 (b) What fraction of the tank will be filled by 2:30 p.m.?

<< Volume >>

<-Graph>

<-Writing>

(a) 4200 × 5 = 21000 (mℓ) → filled by Tap A in 5 min
 55 × 20 × 30 ÷ 2 = 16500 (mℓ) → 4200 mℓ in Only A opens
 21000 - 16500 = 4500 (mℓ) → left in the tank at 2:15 p.m.
 4500 ÷ 10 = 450 (mℓ/min) → decreased in 10 min
 4200 + 450 = 4650 (mℓ/min) → flow out from Tap B
 Only A opens → 4200 mℓ in
 Only B opens → 450 mℓ out
 Both A & B open → 450 mℓ decrease

(b) From 2:15 pm to 2:30 p.m. → 15 (min)
 450 × 15 = 6750 (mℓ) → decrease in 15 min
 16500 - 6750 = 9750 (mℓ) → left in the tank at 2:30 p.m.
 9750 ÷ (55 × 20 × 30) = 13/44

Answer (a) 4.65 ℓ/min (b) 13/44

A Maths Question, PSLE 2021

In the figure, the perimeter of the shaded region is 4 cm longer than the perimeter of the unshaded region. Answer each of the following questions.

(a) Find the length of AB.
 (b) Find the area of shaded region.

<< Area and Perimeter >>

(a) If we compare the perimeter of the 2 regions, the horizontal sides are equal in length and the diagonal line is common. Therefore, compare the vertical sides only.

(3 + 3 + 7) + AC = AC + 13 (cm) → Sum of vertical sides of shaded region
 Since this is 4 cm longer than AB,
 13 - 4 = 9 (cm)
 AB is 9 cm longer than AC.

<-G.R.> Let ① be the length of AC. <-Diagram>

<-Writing>

(13 - 9) + 2 = 2 (cm) → ①: AC
 2 + 9 = 11 (cm) → AB

(b) (3 × 2) + (6 × 4) + (13 × 8) = 134 (cm²) → whole figure
 14 × 11 ÷ 2 = 77 (cm²) → unshaded region
 134 - 77 = 57 (cm²) → shaded region

Answer (a) 11 cm (b) 57 cm²