

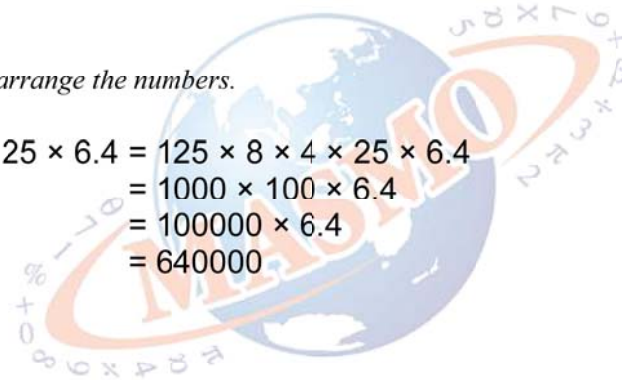


## Solutions

**1** **Method** : Rearrange the numbers.

Note that:

$$\begin{aligned}125 \times 32 \times 25 \times 6.4 &= 125 \times 8 \times 4 \times 25 \times 6.4 \\ &= 1000 \times 100 \times 6.4 \\ &= 100000 \times 6.4 \\ &= 640000\end{aligned}$$





## Solutions

**2** Method 1: Reasoning.

Rande is not wearing red cap and Tony is wearing orange cap, so Rande is wearing green cap and **Sean's cap is red.**

Method 2: Draw a table.

Put a tick for a correct statement and put a cross for a wrong statement.

	Orange	Green	Red
Rande		Step3 ✓	Step1 ✗
Sean			Step4 ✓
Tony	Step2 ✓		

Step 1 : Rande does not wear the red cap.

Step 2 : Tony wears orange cap.

Step 3 : Rande does not wear the red cap or orange cap, so he wears green cap.

Step 4 : Hence, **Sean wears red cap.**



**Solutions**

**3** **Method** : Reasoning.

Since  $5B2$  is divisible by 3,  $5 + B + 2$  is divisible by 3.  $B + 7$  is a multiple of 3.  
Therefore  $B$  is 2 or 5 or 8.

$$\begin{array}{r} 3\ A\ 8 \\ +\ 1\ 7\ 4 \\ \hline 5\ 2\ 2 \end{array}$$

$$\begin{array}{r} 3\ A\ 8 \\ +\ 1\ 7\ 4 \\ \hline 5\ 5\ 2 \end{array}$$

$$\begin{array}{r} 3\ A\ 8 \\ +\ 1\ 7\ 4 \\ \hline 5\ 8\ 2 \end{array}$$

The value of  $A$  is 4.

The value of  $A$  is 7.

The value of  $A$  is 0.

**The value of  $A$  is 0, 4 or 7.**





## Solutions

**4** Method 1: Assume that all coins are 10 cents.

Suppose all 24 coins were 10 cents. This would total up to RM 2.40. We are still RM 1.60 short of the desired total RM 4. Exchange 4 10 cents for 4 50 cents. Then it will total up to RM 4.

**Therefore, the change consisted of 20 10 cents and 4 50 cents.**

Method 2: Pairing 1 10 cents and 1 50 cents into a group.

Pair up each 10 and 50 cents. Suppose there were 12 pairs of such coins, total up to RM 7.20. Now switch one 50 cents to 10 cents at one time. When we do this, 40 cents will be taken away each time. We want to have RM 4, which means we have to take away RM 3.20. We do the switch for 8 times. After switching, we have 4 50 cents and 20 10 cents, which total up to RM 4.

**Thus, there are 4 50 cents and 20 10 cents.**

Method 3: Using Algebra.

Algebra: Let  $x$  represent the number of 50 cents and  $y$  the number of 10 cents.

Given	(1)	$x$	+	$y$	=	24
Given	(2)	$50x$	+	$10y$	=	400
Divide both sides of (2) by 10	(3)	$5x$	+	$y$	=	40
Subtract (1) from (3)	(4)	$4x$			=	16
Divide both sides by 4	(5)	$x$			=	4
Substitute 4 for $x$ in (1)	(6)	4	+	$y$	=	24
Subtract 4 from both sides of (6)	(7)			$y$	=	20

**Hence, we have 4 50 cents and 20 10 cents.**



## Solutions

**5** Method : Make a table and observe the pattern.

Powers of 2	$2^1$	$2^2$	$2^3$	$2^4$	$2^5$	$2^6$	$2^7$	$2^8$	...
Units digit	2	4	8	6	2	4	8	6	...

Notice that the pattern of unit digits, 2, 4, 8, 6 repeats in groups of 4. Divide 2010 by 4 will have remainder of 2.

**Thus the unit digit of  $2^{2010}$  will fall on the second of 2,4,8,6, which is 4.**

