

MATHEMATICS

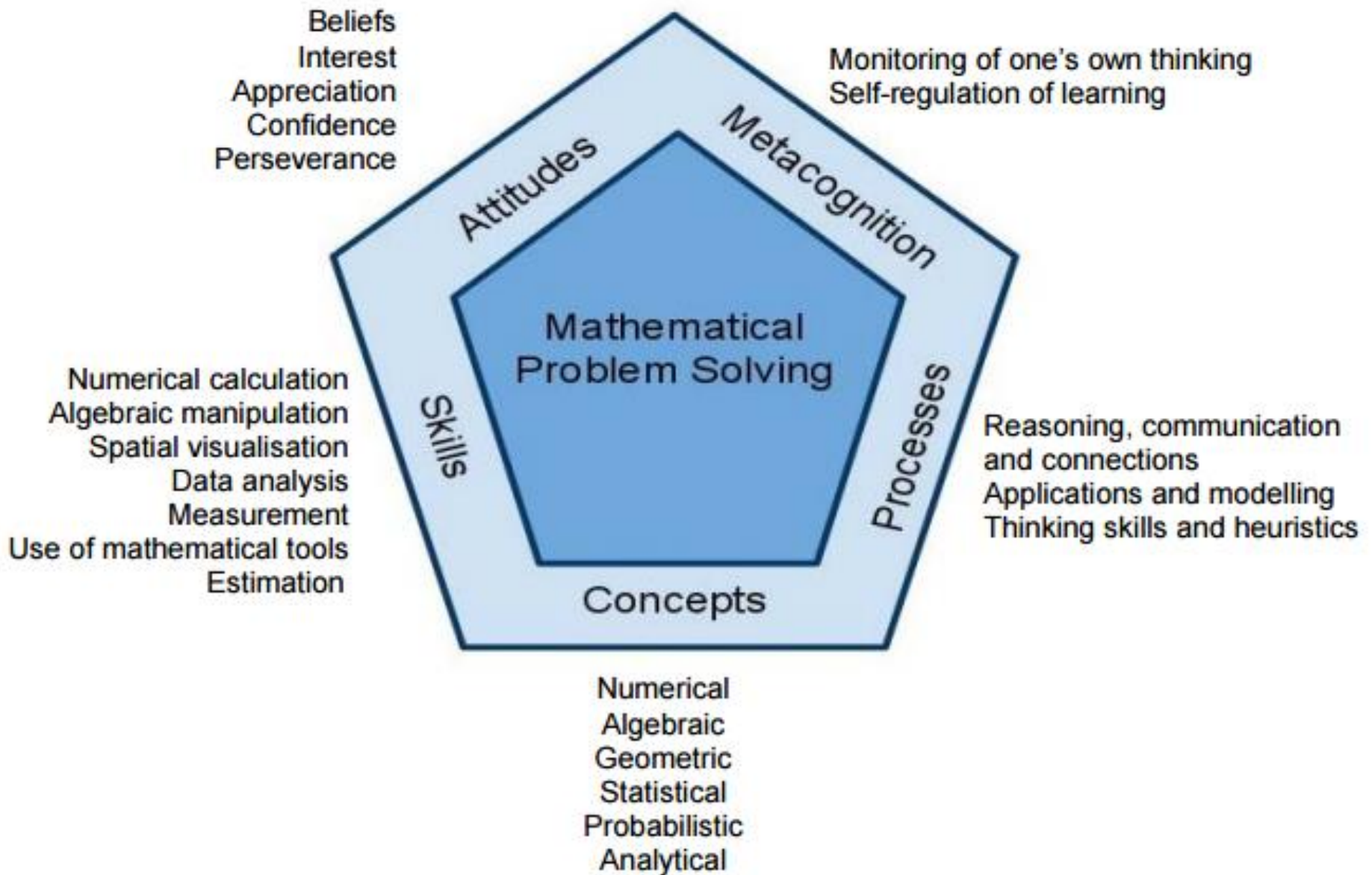
SUBJECT-BASED BANDING BRIEFING



Outline

- ▶ Math curriculum framework
- ▶ SBB Math exam format and topics
- ▶ Item types
- ▶ Example of exam questions
- ▶ Students' common mistakes
- ▶ Study tips

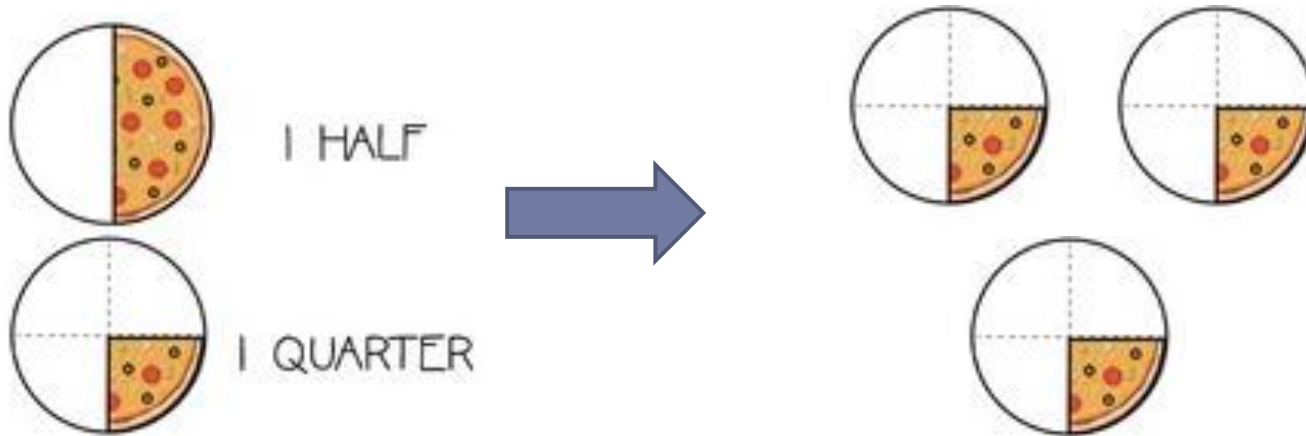
Singapore Math Framework



Emphasis on Math Processes

- Mathematical reasoning and communication
e.g. concept of fractions as equal parts

$$\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$$



Emphasis on Math Processes

- Use of thinking skills and strategies to solve problems, e.g. model drawing

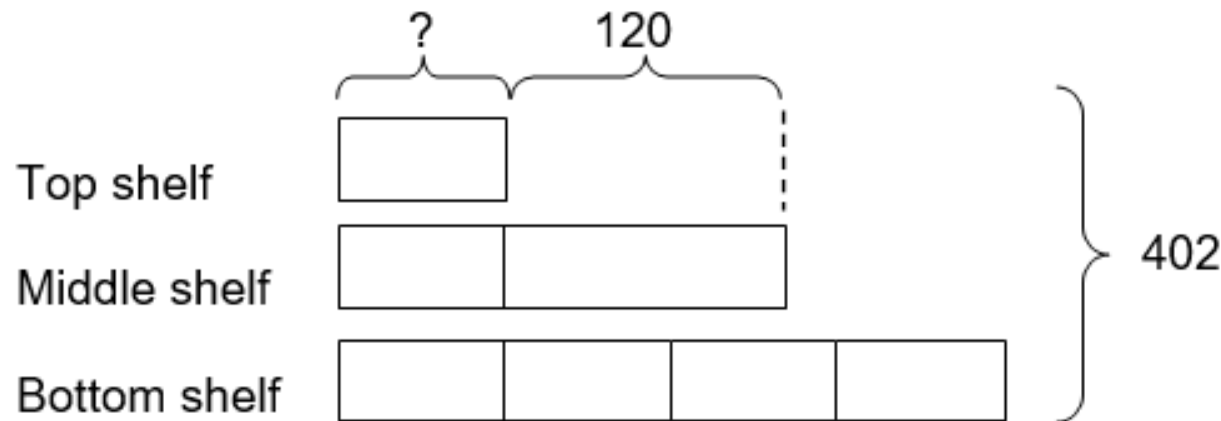
There were 402 books in a bookcase altogether.

The books had three shelves.

The middle shelf had 120 more books than the top shelf.

The bottom shelf had 4 times as many books as the top shelf.

How many books were there on the top shelf?



SBB Math Exam Topics

- Whole Numbers
- Fractions
- Decimals
- Geometry
- Area and Perimeter
- Table and Graph
- Time

SBB Math Exam Format

Duration: 1 hour 45 minutes

Booklet	Item type	No. of questions	Mark per question	Weighting
A	MCQ (Multiple Choice)	15	2m	30%
B	SAQ (Short-Answer)	20	2m	40%
	LAQ (Long-Answer)	8	3m, 4m	30%

Types of the questions

Recall and perform computation

Recall mathematical facts, concepts, rules and formulae; perform straightforward computations

Understand and apply

Interpret information; understand and apply mathematical concepts and skills in a variety of contexts.

Reason and analyse

Reason mathematically; analyse information and make inferences; select appropriate strategies to solve problems

Example 1

Item type: recall concept

What is the value of digit 2 in 23 576?

- (1) 20
- (2) 200
- (3) 2000
- (4) 20 000

Ans: 4

Example 2

Item type: recall concept and perform straightforward computation

There are 318 boxes of pencils.

Each box has 16 pencils.

How many pencils are there altogether?

$$318 \times 16 = 5088$$

There are **5088** pencils altogether.

Example 3

Item type: understand and apply concept

Alex spent \$24 on food and saved the remaining \$6.
What fraction of his total money did he save?

(1) $\frac{1}{4}$

(2) $\frac{1}{5}$

(3) $\frac{4}{5}$

(4) $\frac{3}{4}$



Example 3

Item type: understand and apply concept

Alex spent \$24 on food and saved the remaining \$6.
What fraction of his total money did he save?

(1) $\frac{1}{4}$

(2) $\frac{1}{5}$

(3) $\frac{4}{5}$

(4) $\frac{3}{4}$

Ans: 2

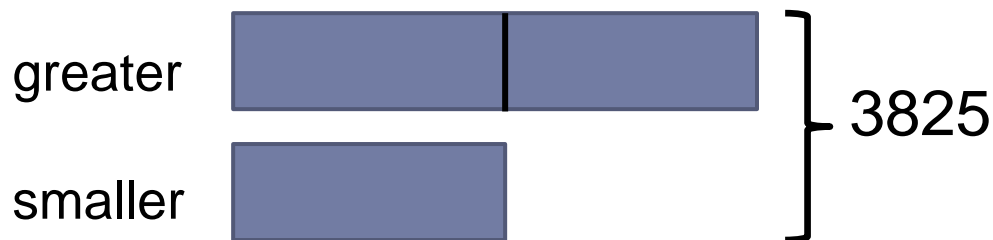
Example 4

Item type: understand and apply concept

The sum of two numbers is 3825. The greater number is twice as much as the smaller number. What is the greater number?

Example 4

The sum of two numbers is 3825. The greater number is twice as much as the smaller number.
What is the greater number?



$$3 \text{ units} = 3825$$

$$1 \text{ unit} = 3825 \div 3 = 1275$$

$$2 \text{ units} = 1275 \times 2 = 2550$$

The greater number is 2550.

Example 5

Item type: reason and analyse information

Mr Tan shared some coins with a group of children.
If he gave 8 coins to each child, he would have 3 coins left.
If he gave 9 coins to each child, he needed 2 more coins.
How many coins did Mr Tan have?

Mr Tan shared some coins with a group of children.
If he gave 8 coins to each child, he would have 3 coins left.
If he gave 9 coins to each child, he needed 2 more coins.
How many coins did Mr Tan have?

Multiples of 8: 8, 16, 24, 32, 40, ...

3 coins left (+3): 11, 19, 27, 35, 43, ...

Multiples of 9: 9, 18, 27, 36, 45, ...

Need 2 coins (-2): 7, 16, 25, 34, 43, ...

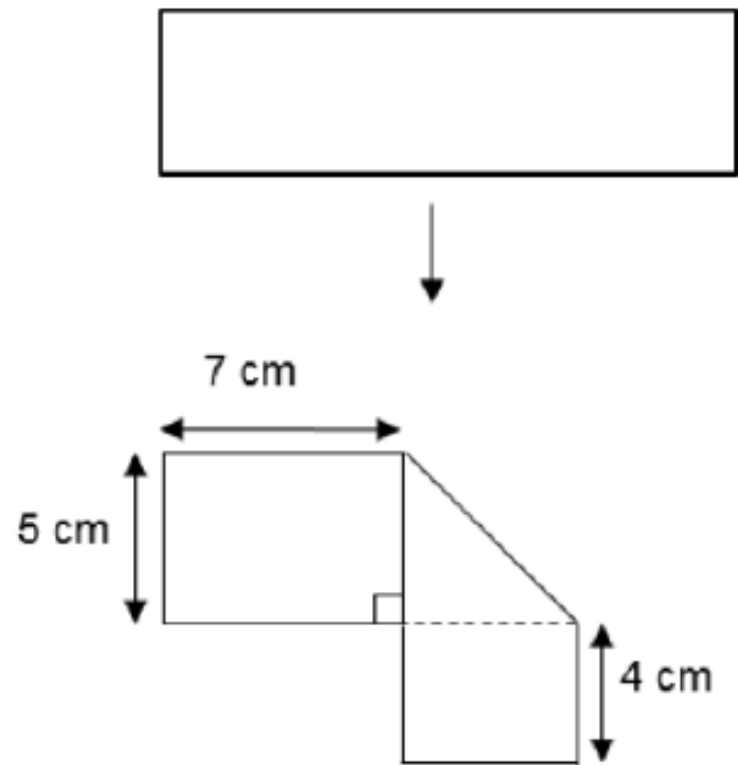
Mr Tan had 43 coins.

Example 6

Item type: reason and analyse information

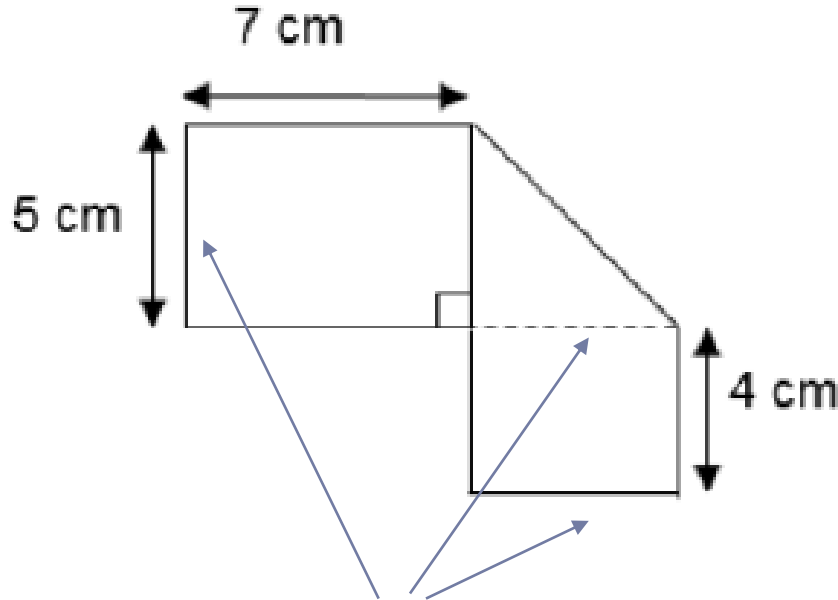
A rectangular piece of paper is folded to form the shape shown.

What is the area of the rectangular piece of paper before it was folded?



Example 6

A rectangular piece of paper is folded to form the shape shown below. What is the area of the rectangular piece of paper before it was folded?



Reasoning: these sides have the same length

$$\begin{aligned}\text{Length} &= 7\text{cm} + 5\text{cm} + 4\text{cm} \\ &= 16\text{cm}\end{aligned}$$


$$\text{Breadth} = 5\text{cm}$$

$$\begin{aligned}\text{Area} &= L \times B \\ &= 16\text{ cm} \times 5\text{ cm} \\ &= \underline{80\text{ cm}^2}\end{aligned}$$

Student's Common Mistakes

1. Transfer error

Example: $9 \times \$12 = \108


$$\$180 \div 2 = \$90$$



Mr Ali has \$9.

2. Omission or incorrect units of measurement

Example:

☐ 1 km = 100 m

(Wrong fact)

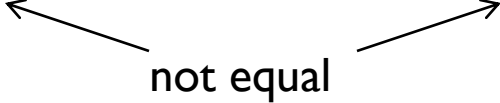
☐ The volume of the water is 2.

(Missing unit)

Student's Common Mistakes

3. Writing incorrect Math equations

Example: $\underline{20 + 10} = 30 + 5 = \underline{35}$



not equal

(Wrong equations as the 2 steps are combined into one)

How To Do Well in Examination

- ✓ Underline or annotate important information in word problems.
- ✓ Do not dwell too long on a question. Skip questions when unsure of the approach to solve the question and return to complete them later on.
- ✓ Attempt all questions.
- ✓ Show all the Math equations and workings.
- ✓ Check the accuracy of the calculations.

How Parents Can Support Their Child

- ❑ Monitor the homework completion
 - Get your child to present his/her work clearly and systematically
- ❑ Encourage your child to have regular revision
 - Attempt questions where corrections have been made for previous mistakes
 - Get the basic facts and formulae right
 - Know what you are practicing
- ❑ Build time management skills
 - When doing a timed practice, get your child to complete the practice within the given time

Thank you

For further queries, you may consult
your child's Math teacher.

