



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

# Comparison of mathematics curriculum

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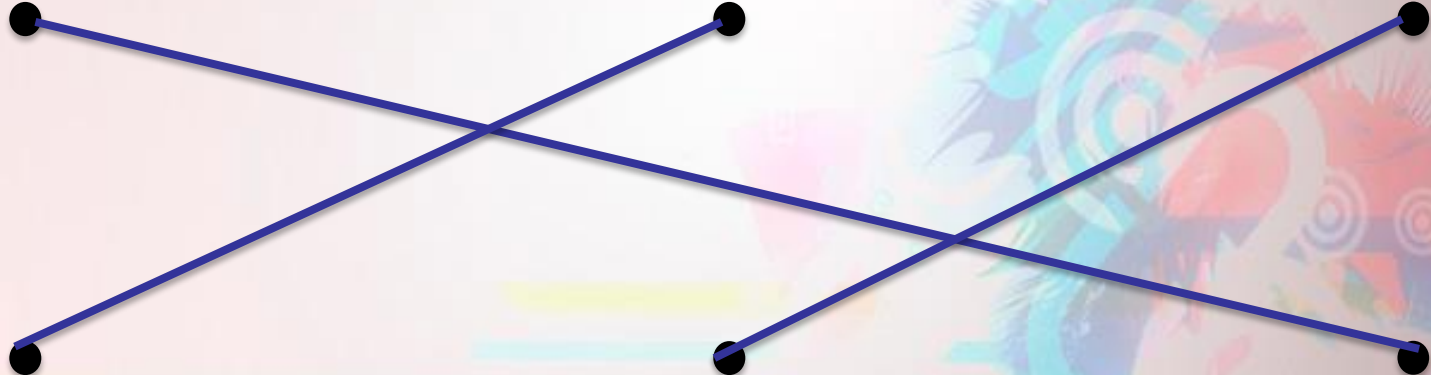
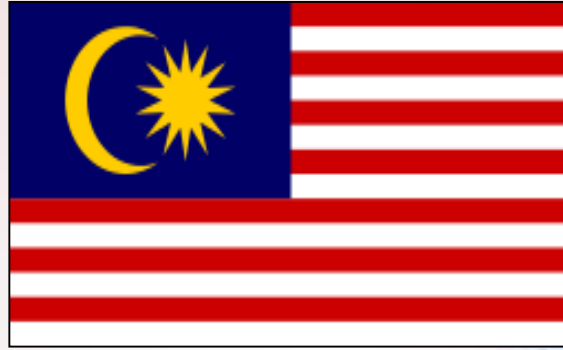
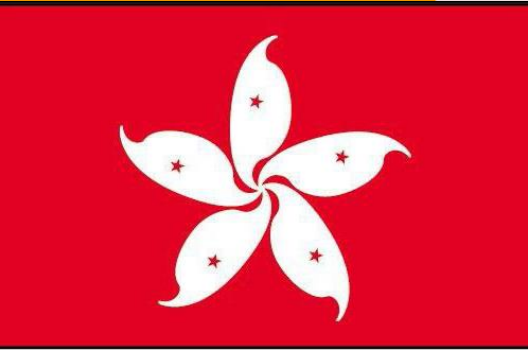
**MPP 151 068**

# Comparison of mathematics curriculum









# Match the following:

[www.utm.my](http://www.utm.my)



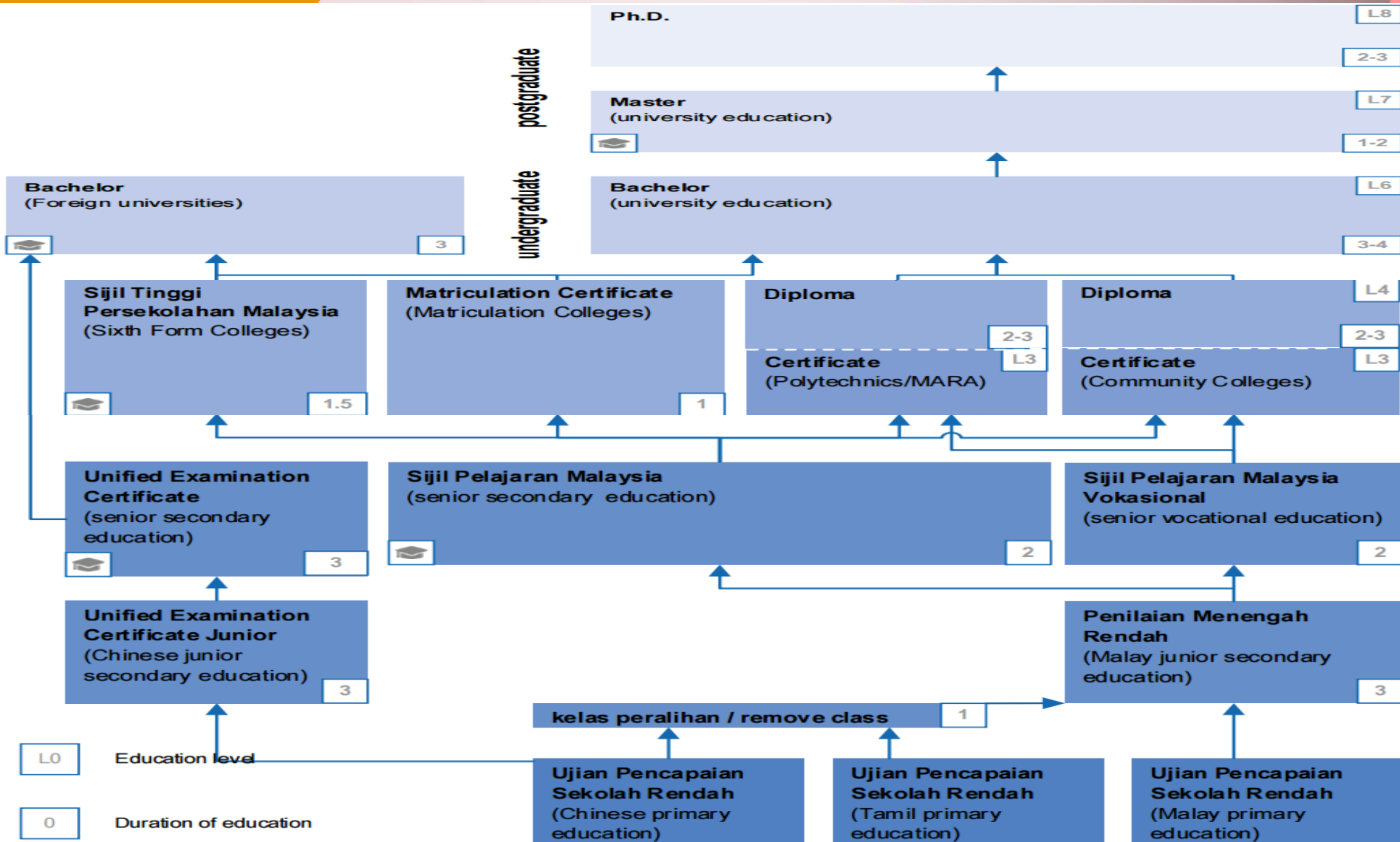
# Background of each country

www.utm.my

	Malaysia	Hong Kong	Turkey
<b>Area</b>	330,803 km <sup>2</sup>	1104 km <sup>2</sup>	783,356 km <sup>2</sup>
<b>Capital City</b>	Kuala Lumpur	Kowloon	Ankara
<b>Population</b>	30 million	7.3 million	74.93 million
<b>Head of the Country</b>	Yang di-Pertuan Agong of Malaysia 	Chief Executive Leung Chun-ying 	Recep Tayyip Erdoğan 
<b>Income per month</b>	RM 2231	RM 8 719	RM 1965
<b>Government of the Country</b>	Democratic (Federal and State Legislatures)	Democratic (Legislative Council and District Council)	Unitary Parliamentary Constitutional Republic
<b>Head of Education Department</b>	Minister of Education Dato' Seri Mahdzir bin Khalid 	Secretary of Education, Eddie Ng 	Minister of National Education, Nabi AVCI 

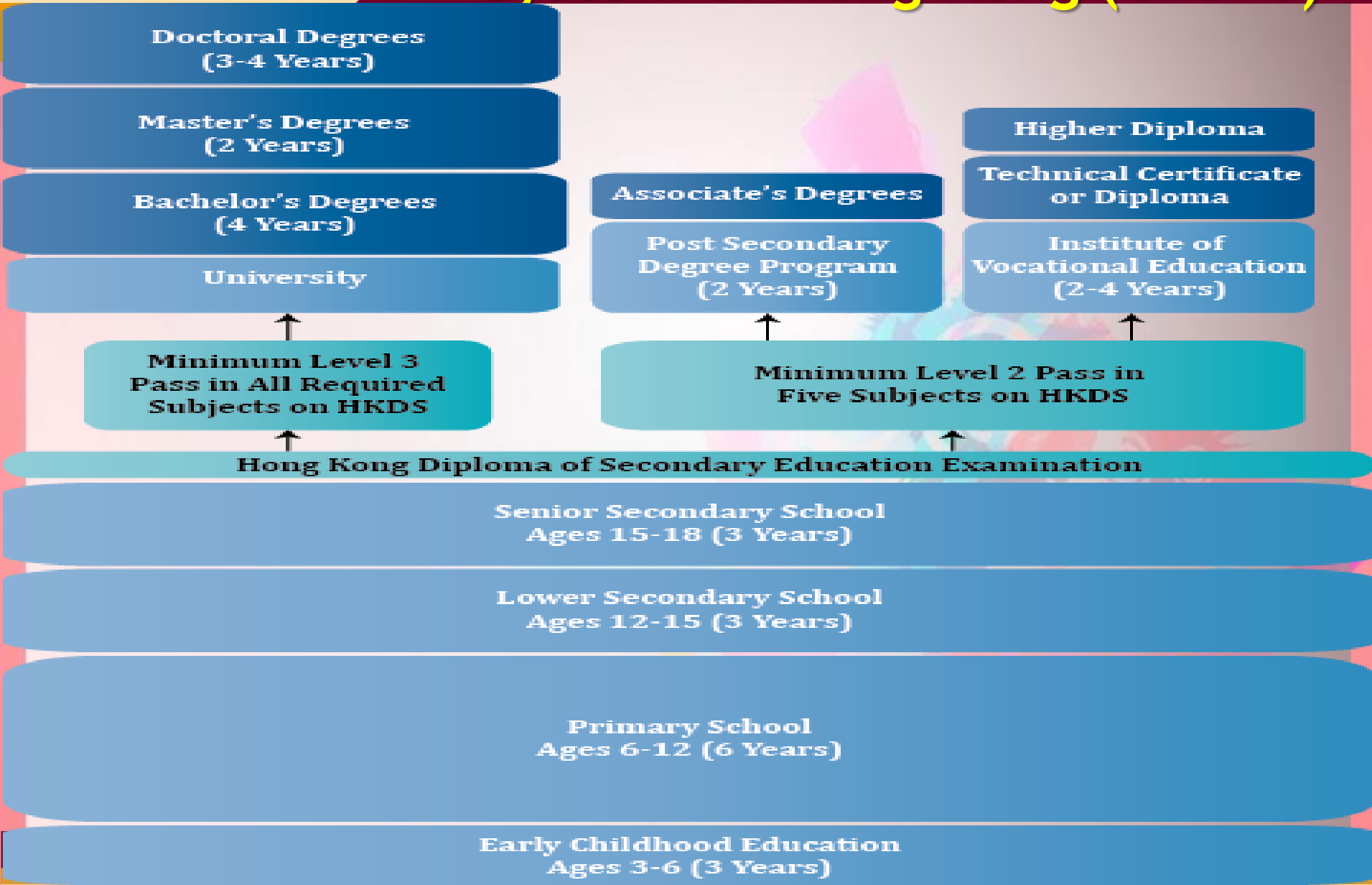
# The Structure of Education System of Malaysia (6+5+2/1)

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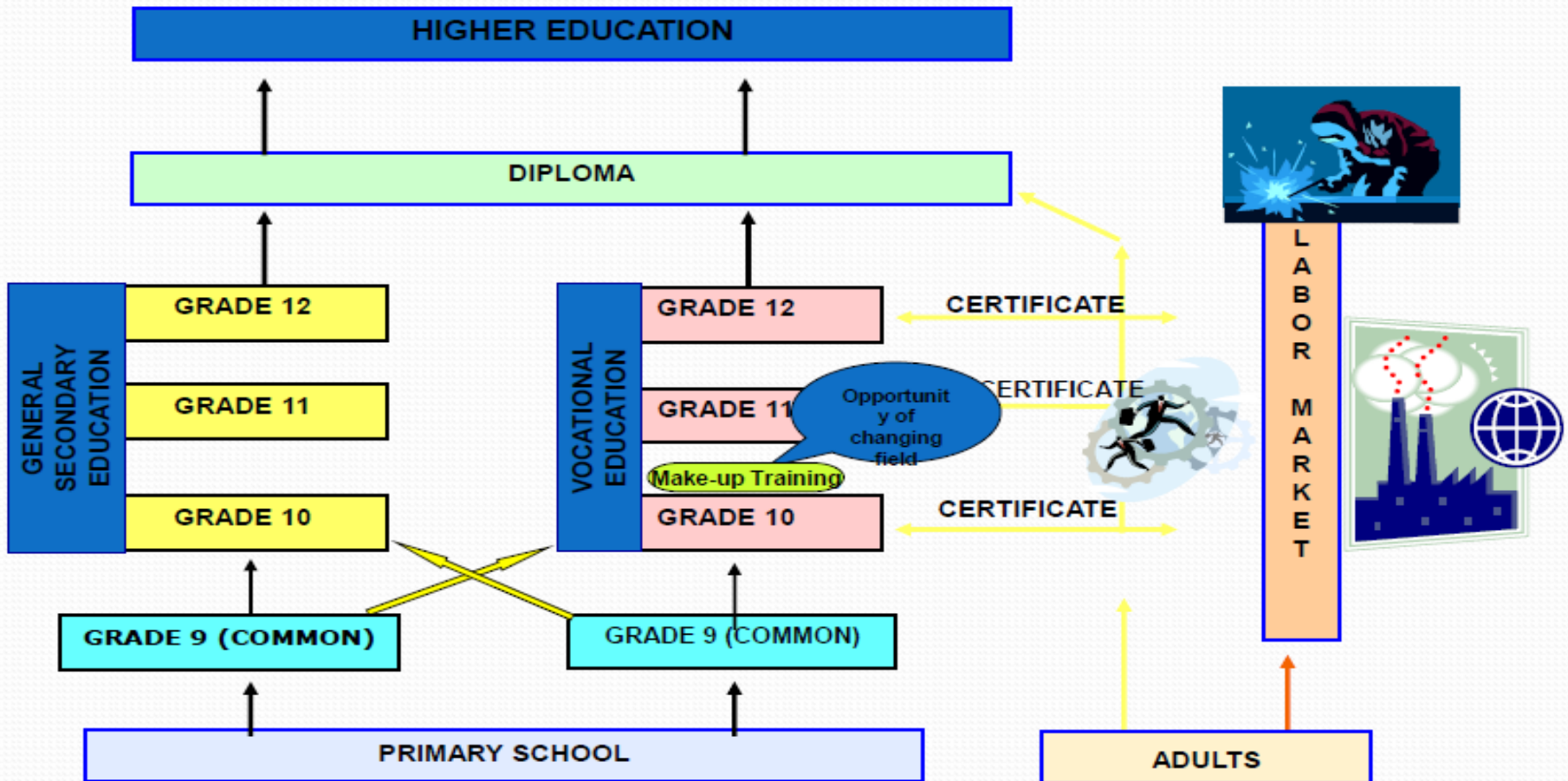


# The Structure of Education System of Hong Kong (6+3+3)



# The Structure of Education System of Turkey (4+4+4)

## EDUCATION SYSTEM AND TRANSITIONS



MALAYSIA	HONG KONG	TURKEY
<ul style="list-style-type: none"> <li>• Numbers and Operations</li> <li>• Measurement and Geometry</li> <li>• Relationship and Algebra</li> <li>• Statistics and Probability</li> <li>• Discrete Number</li> </ul>	<ul style="list-style-type: none"> <li>• Number and Algebra</li> <li>• Dimensions</li> <li>• Measures, Shape and Space</li> <li>• Dimensions</li> <li>• Data Handling Dimension</li> </ul>	<ul style="list-style-type: none"> <li>• Numbers</li> <li>• Geometry</li> <li>• Measurements</li> <li>• Probability and Statistics</li> </ul>



# Number of Topics at Each Grade Level by Country

[www.utm.my](http://www.utm.my)

Country	Grade Level											
	1	2	3	4	5	6	7	8	9	10	11	12
Malaysia	9	13	15	18	11	9	12	13	15	11	10	16
Hong Kong	5	5	5	9	11	11	18	17	17	17 (same topics, different level)		
Turkey	9	12	15	17	18	21	17	18	6	9	5	6

Countries	Duration
<b>Malaysia</b>	150 periods per academic year (30 weeks of lesson, 5 periods per week, 35 minutes each)
<b>Hong Kong</b>	160 periods per academic year (each period 35 minutes)
<b>Turkey</b>	144 hours per academic year

<b>Countries/ Ranking</b>	<b>Malaysia</b>	<b>Hong Kong</b>	<b>Turkey</b>
<b>Scores of TIMSS 2015 for Grade 8 / Form 2 students</b>			
<b>Science</b>	<b>471</b>	<b>546</b>	<b>493</b>
<b>Mathematics</b>	<b>465</b>	<b>594</b>	<b>458</b>
<b>PISA 2012 (Total number of countries partipated: 65)</b>			
<b>Science</b>	<b>53</b>	<b>2</b>	<b>43</b>
<b>Mathematics</b>	<b>52</b>	<b>3</b>	<b>44</b>
<b>Reading</b>	<b>59</b>	<b>2</b>	<b>41</b>
<b>World smartest country based on Mathematics and Science Achievement 2015 (Total number of countries participated: )</b>	<b>52</b>	<b>2</b>	<b>41</b>

## MALAYSIA

- **inquiry-based learning**
- **problem solving contextual learning**
- **collaborative learning**
- **problem-based and project-based work**
- **Constructivism**
- **Science, Technology, Engineering and Math (STEM)**

## HONG KONG

- **Teaching as Direct Instruction**
- **Teaching as Inquiry**
- **Teaching as Co-construction**

## TURKEY

- **Teaching-learning activities prepared parallel to learning outcomes require student methods, techniques and strategies**

	Malaysia	Hong Kong	Turkey
<b>Formative Assessment</b> <b>(Assessment for Learning)</b>	(a) classwork and homework (b) short quizzes; (c) project work, such as making models, statistical surveys etc; (d) discussion and presentation in class; (e) observation of pupils' performance during lessons; (f) tests and examinations		
<b>Summative Assessment</b> <b>(Assessment of Learning)</b>	Primary 6: UPSR Secondary 3: PT 3 Secondary 5: SPM Upper secondary : STPM	Primary 1 – Secondary 3 Basic Competency Assessment Secondary 6: Hong Kong Diploma of Secondary Education Examination (HKDSE)	Grade 6, 7 and 8: Level Determination Exam Grade 8: Secondary Schools Exam Grade 12: University Entrance Exam



# Example of Exam Questions

8. (a) Diagram 6.1 shows two composite solids, T and U.  
Rajah 6.1 menunjukkan dua pepejal gabungan, T dan U.

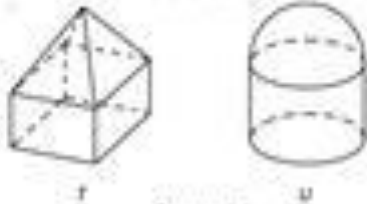


Diagram 6.1  
Rajah 6.1

Based on Diagram 6.1, complete the sentences below by using information in Diagram 6.1.

Berdasarkan Rajah 6.1, lengkapkan ayat-ayat di bawah dengan menggunakan maklumat yang diberi dalam Rajah 6.1.

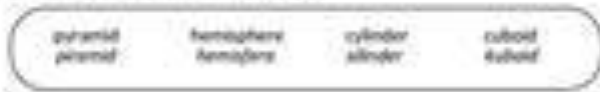


Diagram 6.2  
Rajah 6.2

Answer / Jawapan :

T is a combination of \_\_\_\_\_ and \_\_\_\_\_

T ialah gabungan \_\_\_\_\_ dan \_\_\_\_\_

U is a combination of \_\_\_\_\_ and \_\_\_\_\_

U ialah gabungan \_\_\_\_\_ dan \_\_\_\_\_

[2 marks]  
[2 markah]

(b) Amir will place a ball on top of a pillar in Diagram 4.1. Table 4.1 shows the diameters of three balls A, B and C.

Amir akan meletakkan sebiji bola di puncak tiang seperti dalam Rajah 4.1. Jadual 4.1 menunjukkan diameter bagi tiga biji bola A, B dan C.

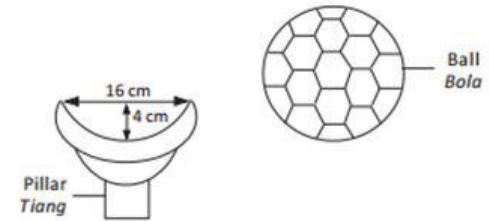


Diagram 4.1  
Rajah 4.1

Ball Bola	Diameter (cm)
A	18
B	20
C	22

Table 4.1  
Jadual 4.1

Which ball A, B or C, can fit perfectly on top of the pillar? Show the calculation to support Amir's choice.

Antara bola A, B atau C, yang manakah muat dengan sempurna di puncak tiang itu? Tunjukkan pengiraan bagi menyokong pilihan Amir.

[4 marks]  
[4 markah]

Answer / Jawapan :

- 6 In Diagram 2,  $PQRSUV$  is an irregular hexagon and  $SU = ST$ .  $RST$  and  $TUV$  are straight lines.

Dalam Rajah 2,  $PQRSUV$  ialah sebuah heksagon tak sekata dan  $SU = ST$ .  $RST$  dan  $TUV$  ialah garis lurus.

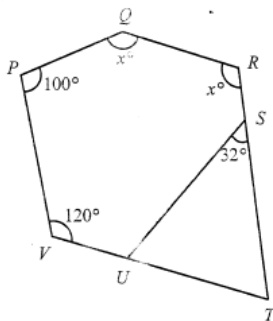


Diagram 2  
Rajah 2

Find the value of  $x$ .

Cari nilai  $x$ .

- A 102
- B 123
- C 139
- D 144

- 6 Diagram 6 shows two parallel straight lines,  $AOB$  and  $CPD$  drawn on a Cartesian plane. Rajah 6 menunjukkan dua garis lurus selari,  $AOB$  dan  $CPD$  dilukis pada suatu satah Cartes.

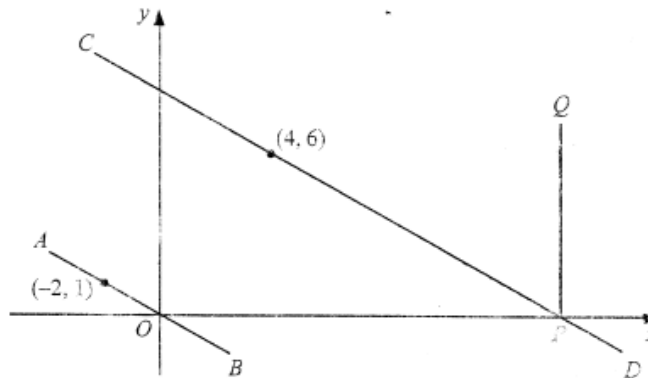


Diagram 6  
Rajah 6

Find

Cari

- (a) the equation of the straight line  $CPD$ ,  
persamaan garis lurus  $CPD$ ,
- (b) the  $x$ -intercept of the straight line  $PQ$ .  
pintasan- $x$  bagi garis lurus  $PQ$ .

[5 marks]  
[5 markah]

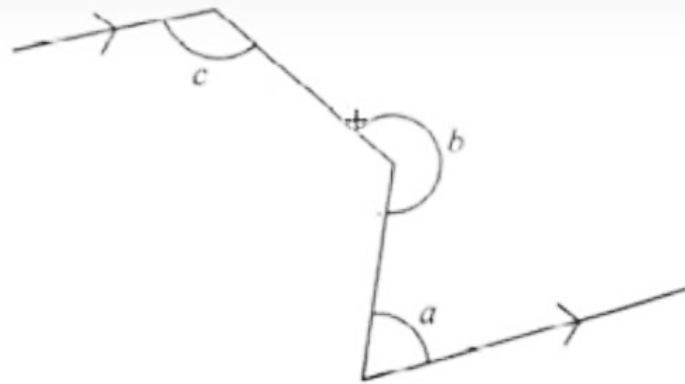


HKDSE 2016 Maths Core Paper 2 Question 15

15. According to the figure, which of the following must be true?

- I.  $a + c = 180^\circ$
- II.  $a + b - c = 180^\circ$
- III.  $b + c = 360^\circ$

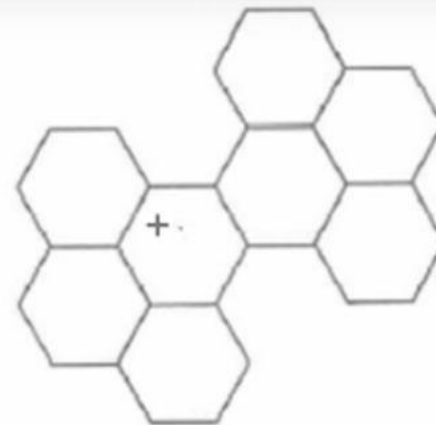
- A. I only
- B. II only
- C. I and III only
- D. II and III only



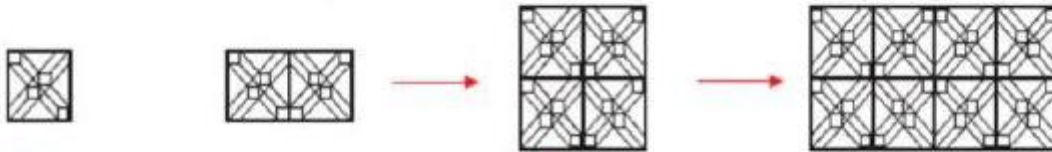
HKDSE 2016 Maths Core Paper 2 Question 23

23. The figure below consists of eight identical regular hexagons. The number of axes of reflectional symmetry of the figure is

- A. 2.
- B. 4.
- C. 6.
- D. 8.



11. Which is the right option to form the following ornamental patterns for the correct sequence of actions performed are given?

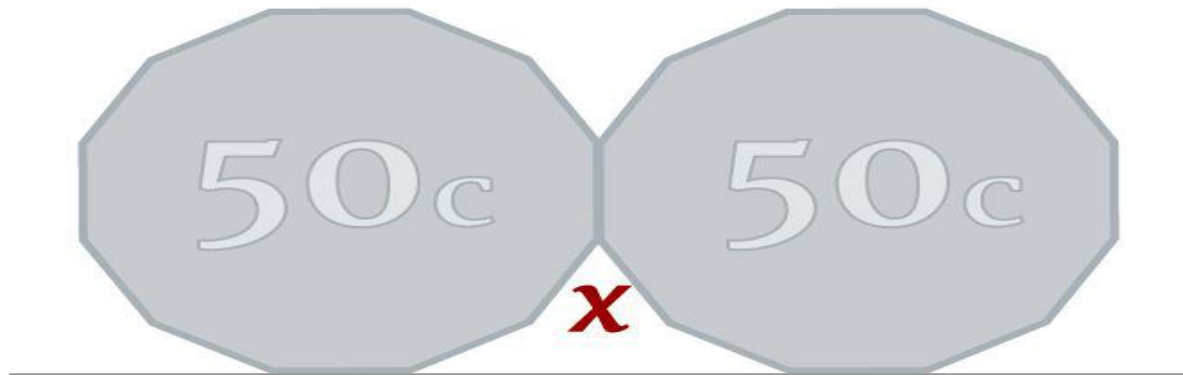


- A) translation-translation-reflexion    B) translation-reflexion-reflexion  
 C) reflexion-reflexion-translation    D) reflexion-translation-translation

## Question 7

A 50 cent coin has 12 sides of equal length.

Two 50 cent coins are balanced next to each other on a table so that they meet along one edge, as shown below



The angle, **X**, is    A)  $12^\circ$     B)  $30^\circ$     C)  $36^\circ$     D)  $60^\circ$     E)  $72^\circ$



# Thank You