

2022/23 第十七屆香港小學數學創意解難比賽

2022/23 The 17th Hong Kong Mathematics Creative Problem Solving Competition for
Primary Schools

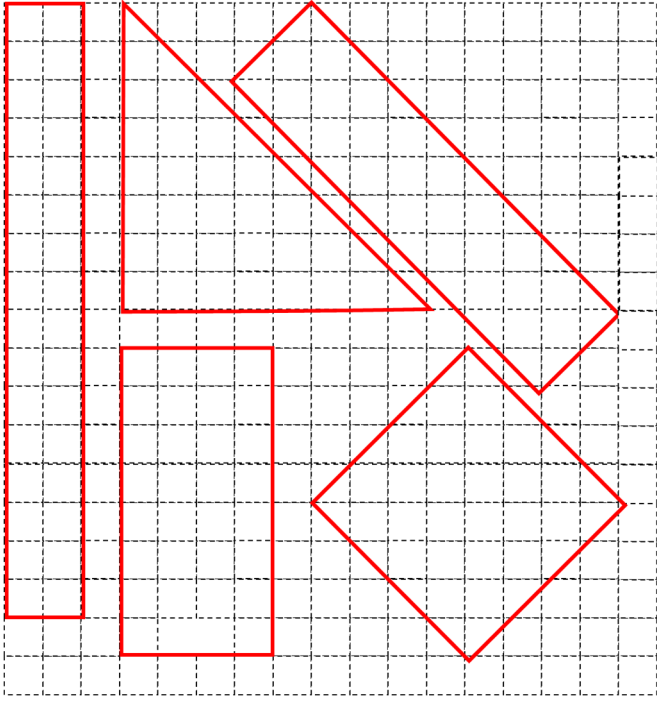
答題紙 Answer sheets

學校名稱 School Name :

得分 Score :

/35

甲部 Section A

答案 Answers		評分 Marks
1.	<p>a) 有多少種未能付款的價格？ How many prices cannot be accepted in the transaction? (a) 答/Ans: 28</p> <p>b) 未能付款的價格當中最高是多少元？ What is the highest price which cannot be accepted in the transaction? (b) 答/Ans: 55</p>	/2
2.	<p>請畫出這五種形狀。 Please draw the five different shapes on the grid paper provided.</p> 	/5

3.

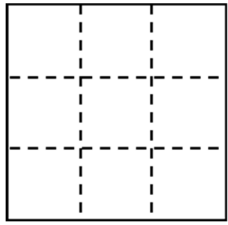
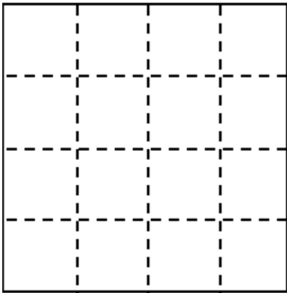
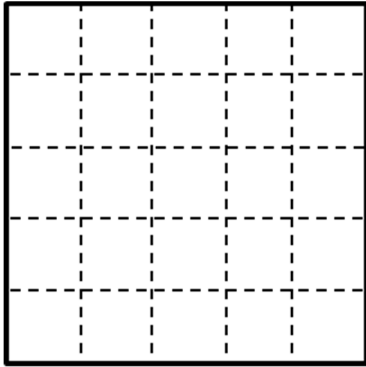
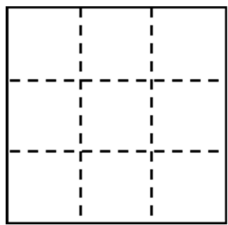
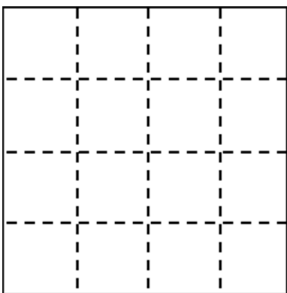
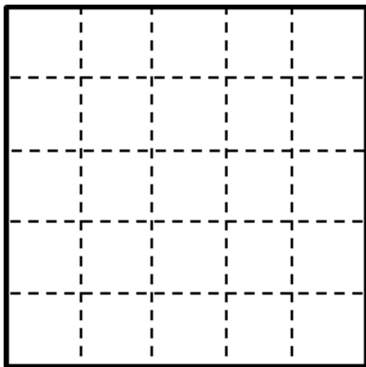
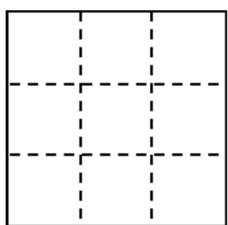
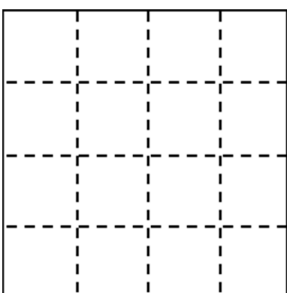
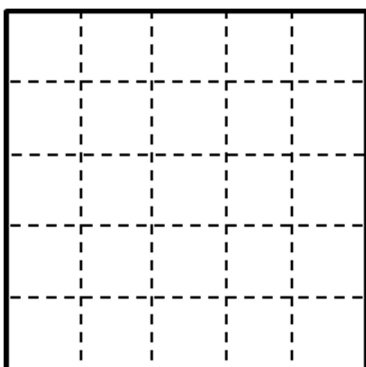
求出第十行的計算結果是多少？
Find the result of the tenth row.

答/Ans: 1155

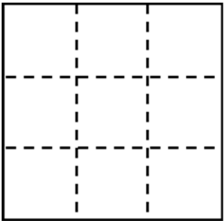
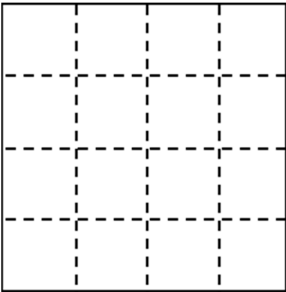
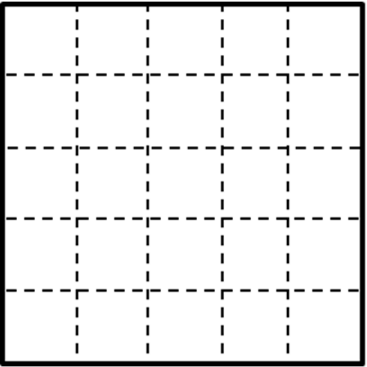
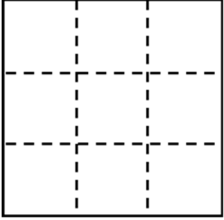
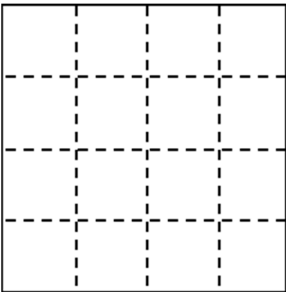
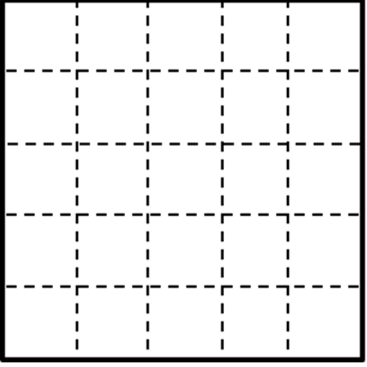
/2

4. 除圖 2 及圖 3 的方法外，試畫出 5 組不同的方法。

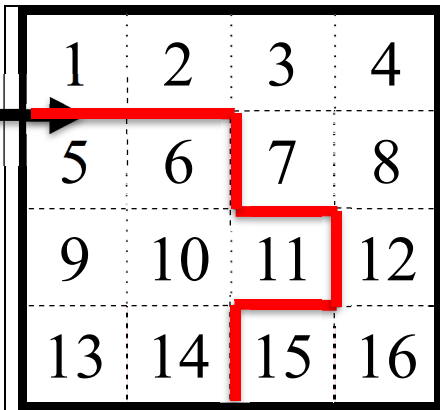
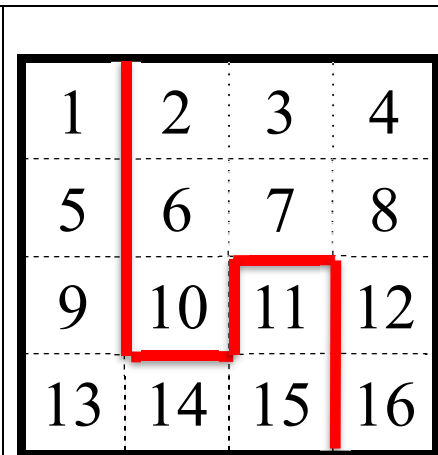
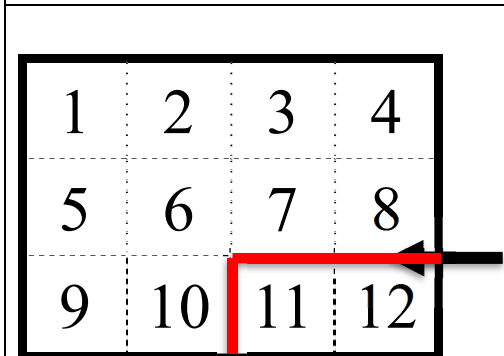
Draw 5 different methods other than the method illustrated in Diagram 2 and Diagram 3.

	3×3 正方形的切割方法	4×4 正方形的切割方法	5×5 正方形的組合方法
1			
2			
3			

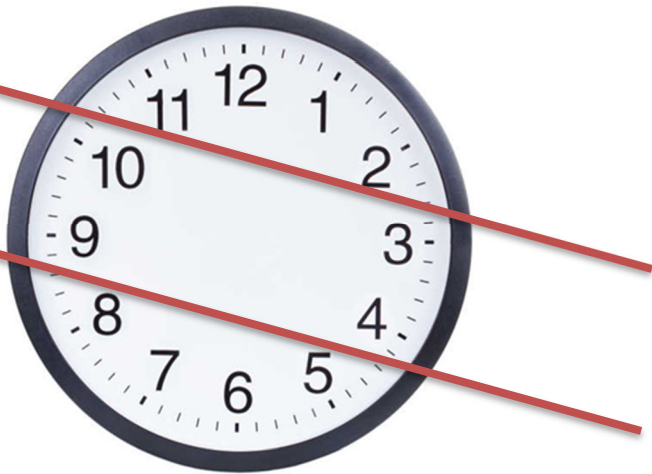
/5

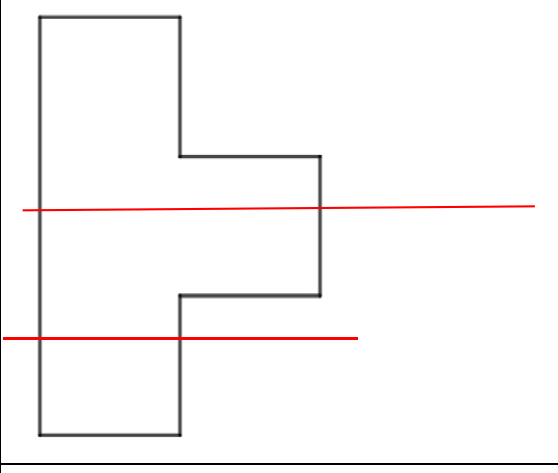
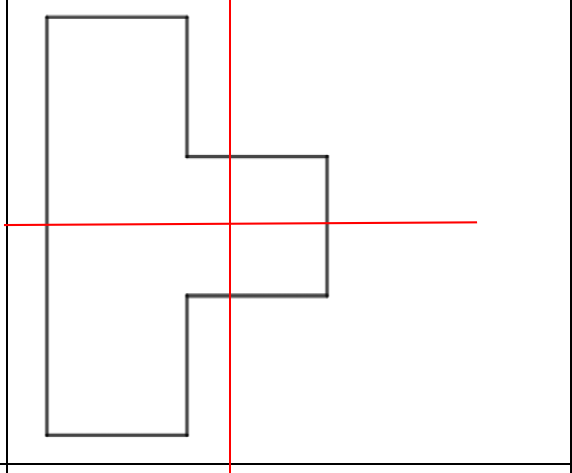
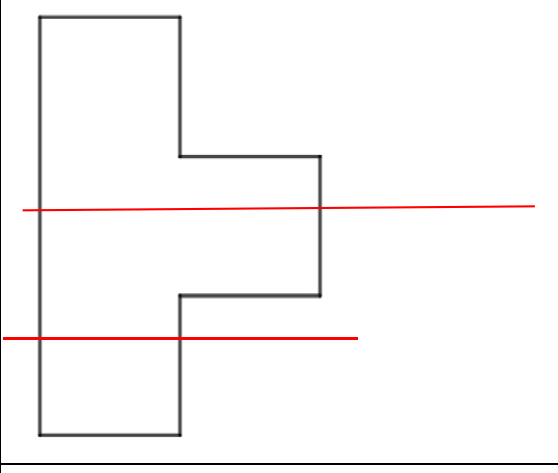
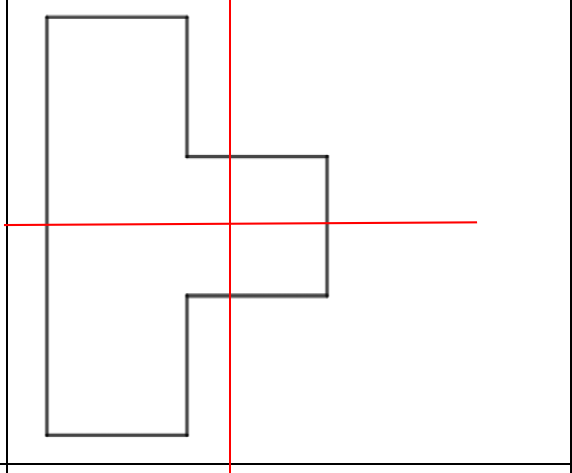
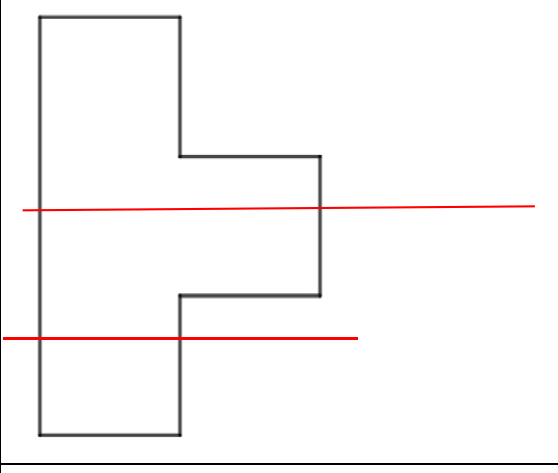
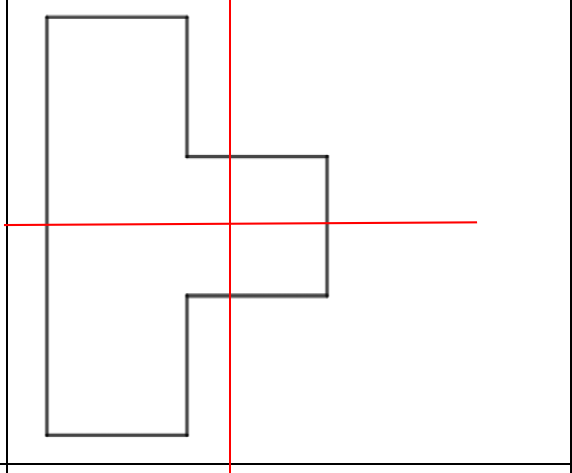
4			
5			
Should be marked case by case			

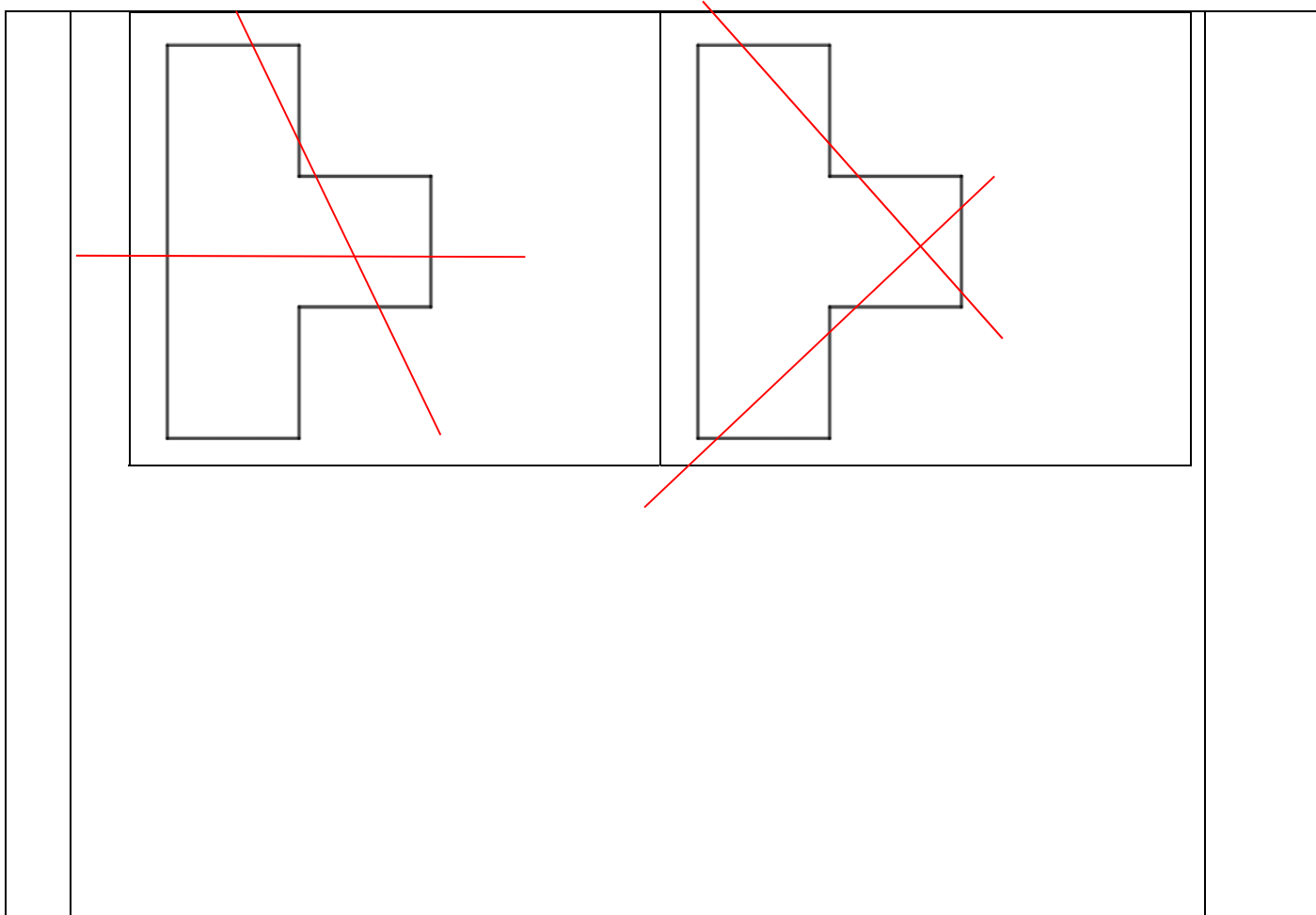
5. 試利用下圖所示的剪咀開始，把紙剪成兩片，令剪開的兩片紙上的數字合計均是相同的。
- Try to mark the cutting lines in each of the diagram below according to the start position marked by the arrow and the ✂ mark, such that the sums of the numbers in each of the two parts are the same.

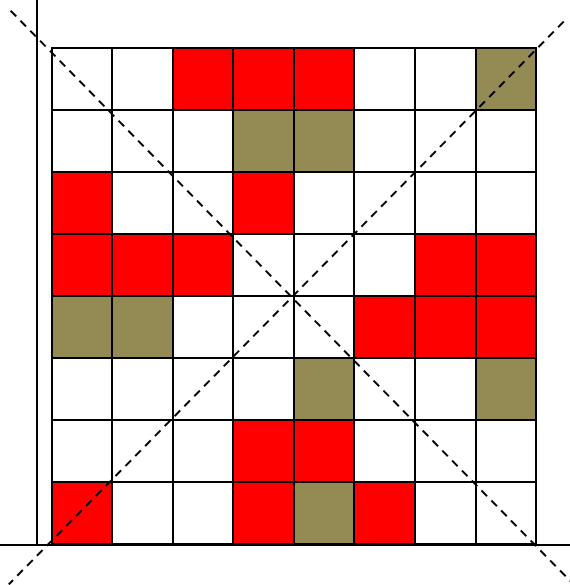
/3

	<div style="border: 2px solid black; padding: 5px; display: inline-block;"> 13 14 15 16 </div>		
6.	<p>(a) 他從家走到辦公室的最短距離是多少？ what is the shortest distance he travels to work?</p>	<p>(a) 答/Ans: 1 km / 1000 m (0 mark if unit is omitted)</p>	/2
	<p>(b) 他可以走的最短路線有多少條？ how many different paths of shortest distance are there?</p>	<p>(b) 答/Ans: 252</p>	
7.	<p>(a) 最少有多少頁？ At least how many pages are there in the newspaper?</p>	<p>(a) 答/Ans: 28</p>	/2
	<p>(b) 最多有多少頁？ At most how many pages are there in the newspaper?</p>	<p>(b) 答/Ans: 28</p>	
8.	<p>試利用直線把鐘面劃分為三塊，使每塊內有四個數，且每塊中四個數的和都是相等的。 Draw straight lines to divide the clock face into three parts such that each part contains four numbers and the sums of the numbers in each part are the same.</p> <div style="text-align: center;">  </div>		/2

9.	<p>如果你是先手，你最好首先取哪張數卡？請描述你的必勝策略。</p> <p>If you were the first player, which card should be taken first? Describe your winning strategy.</p> <p>Marking guideline: Card with number '5' should be taken first: 1 mark 2nd Player cannot win on the next play: 1 mark Explanation of a and $(10-a)$: 2 marks</p>	<p>答/Ans: 如果你是先手，你最好首先取數卡 5。</p> <p>以上遊戲可以下圖解釋。幻方中，橫、直和斜的三個數字之和均是 15。</p> <p>因為 5 在中央，先手取了 5 之後，後手的人無論取那張數卡，都不夠快取勝。</p> <table border="1" data-bbox="901 622 1300 772"> <tr><td>8</td><td>3</td><td>4</td></tr> <tr><td>1</td><td>5</td><td>9</td></tr> <tr><td>6</td><td>7</td><td>2</td></tr> </table>	8	3	4	1	5	9	6	7	2	/4
8	3	4										
1	5	9										
6	7	2										
10.	<p>共可能出現多少種握手的組合？</p> <p>How many possible combinations of hand-shaking are there?</p> <p>答/Ans: 5</p>	/2										
11.	<p>用兩條直線分別分割成 3 個、4 個、5 個及 6 個平面圖形。</p> <p>Divide the plane figure into 3, 4, 5 and 6 parts respectively by two straight lines</p> <table border="1" data-bbox="231 1064 1364 1731"> <tr> <td data-bbox="231 1064 790 1153"> 分割成 3 個平面圖形: Divide into 3 parts: </td> <td data-bbox="790 1064 1364 1153"> 分割成 4 個平面圖形: Divide into 4 parts: </td> </tr> <tr> <td data-bbox="231 1153 790 1646">  </td> <td data-bbox="790 1153 1364 1646">  </td> </tr> <tr> <td data-bbox="231 1646 790 1731"> 分割成 5 個平面圖形: Divide into 5 parts: </td> <td data-bbox="790 1646 1364 1731"> 分割成 6 個平面圖形: Divide into 6 parts: </td> </tr> </table>	分割成 3 個平面圖形: Divide into 3 parts:	分割成 4 個平面圖形: Divide into 4 parts:			分割成 5 個平面圖形: Divide into 5 parts:	分割成 6 個平面圖形: Divide into 6 parts:	/4				
分割成 3 個平面圖形: Divide into 3 parts:	分割成 4 個平面圖形: Divide into 4 parts:											
												
分割成 5 個平面圖形: Divide into 5 parts:	分割成 6 個平面圖形: Divide into 6 parts:											



12. 在下圖最少數量的方格填色，使以下整個圖案成為有兩條對稱軸的軸對稱平面圖形，並以虛線畫出該對稱軸。
 Fill in the minimum number of boxes in the diagram below, such that the whole diagram has two axes of reflectional symmetry. Draw the axes of reflectional symmetry with dotted lines.



/2

乙部 Section B

1. 長方形一的長和闊分別為 p 和 q ，長方形二的長和闊分別為 r 和 s ，其中 p 、 q 、 r 及 s 皆為整數。試寫出可符合以下每一項條件的 p 、 q 、 r 、 s 的其中一個組合。

The length and width of rectangle one are p and q , the length and width of rectangle two r and s , where p , q , r and s are integers. Try to suggest a possible combination of p , q , r , s that fits each the following condition.

- (a) 長方形一的面積較大而長方形二的周界較長。

Rectangle one has bigger area while rectangle two have longer perimeter.

答案 Answer			
p	q	r	s
4	5	1	9

- (b) 長方形二的面積及周界均為長方形一的三倍。

Rectangle two's area and perimeter are both three times that of rectangle one.

答案 Answer			
p	q	r	s
5	6	3	30

- (c) 長方形一的面積為長方形二的雙倍但長方形一的周界為長方形二的一半。

Rectangle one's area is double that of rectangle two and its perimeter is just half of that of rectangle two.

答案 Answer			
p	q	r	s
15	16	2	60