

# Recognising the COVID-19 Pandemic from Data

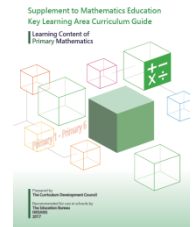
(Primary Mathematics)



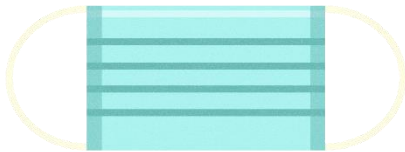
# The Learning Units and Learning Objectives of Primary Mathematics Involved

Learning Unit	Learning Objective
4D1 Bar charts(II)	<ul style="list-style-type: none"> <li>• interpret bar charts of greater frequency counts</li> </ul>
5D1 Bar charts(III)	<ul style="list-style-type: none"> <li>• interpret compound bar charts</li> </ul>
6D1 Averages	<ul style="list-style-type: none"> <li>• solve problems</li> </ul>
6D2 Broken line graphs	<ul style="list-style-type: none"> <li>• construct broken line graphs</li> </ul>
6D4 Uses and abuses of statistics	<ul style="list-style-type: none"> <li>• present the data with appropriate statistical charts</li> <li>• discuss and recognise the uses and abuses of statistical charts in daily life</li> </ul>

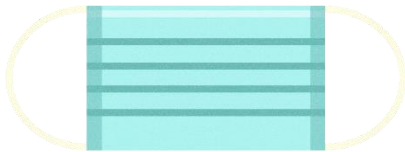
Supplement to Mathematics Education Key Learning Area Curriculum Guide: Learning Content of Primary Mathematics (2017)



The COVID-19 pandemic is ongoing in many countries. More than a thousand confirmed cases has been recorded in Hong Kong. Do you know the detail situation?

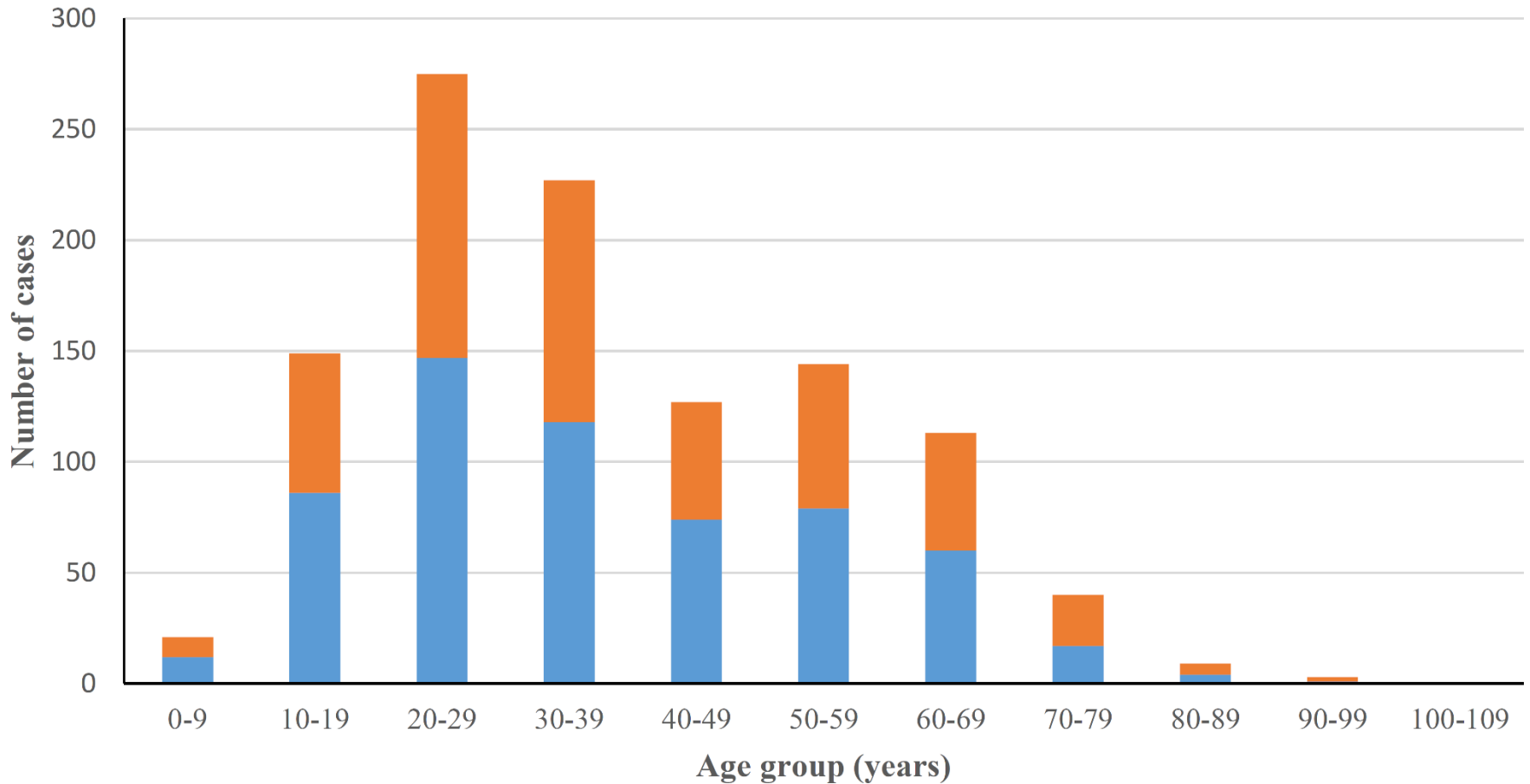


To know more about the situation in Hong Kong, we should make reference to the detail and reliable information provided by the websites of related government departments and the government website [www.coronavirus.gov.hk](http://www.coronavirus.gov.hk) .



(as at 8 June 2020)

## Age distribution of cases of COVID-19 in Hong Kong



Source: COVID-19 Thematic Website - Together, We Fight the Virus: Latest local situation of COVID-19 (as at 8 June 2020)  
[https://www.chp.gov.hk/files/pdf/local\\_situation\\_covid19\\_tc.pdf](https://www.chp.gov.hk/files/pdf/local_situation_covid19_tc.pdf)

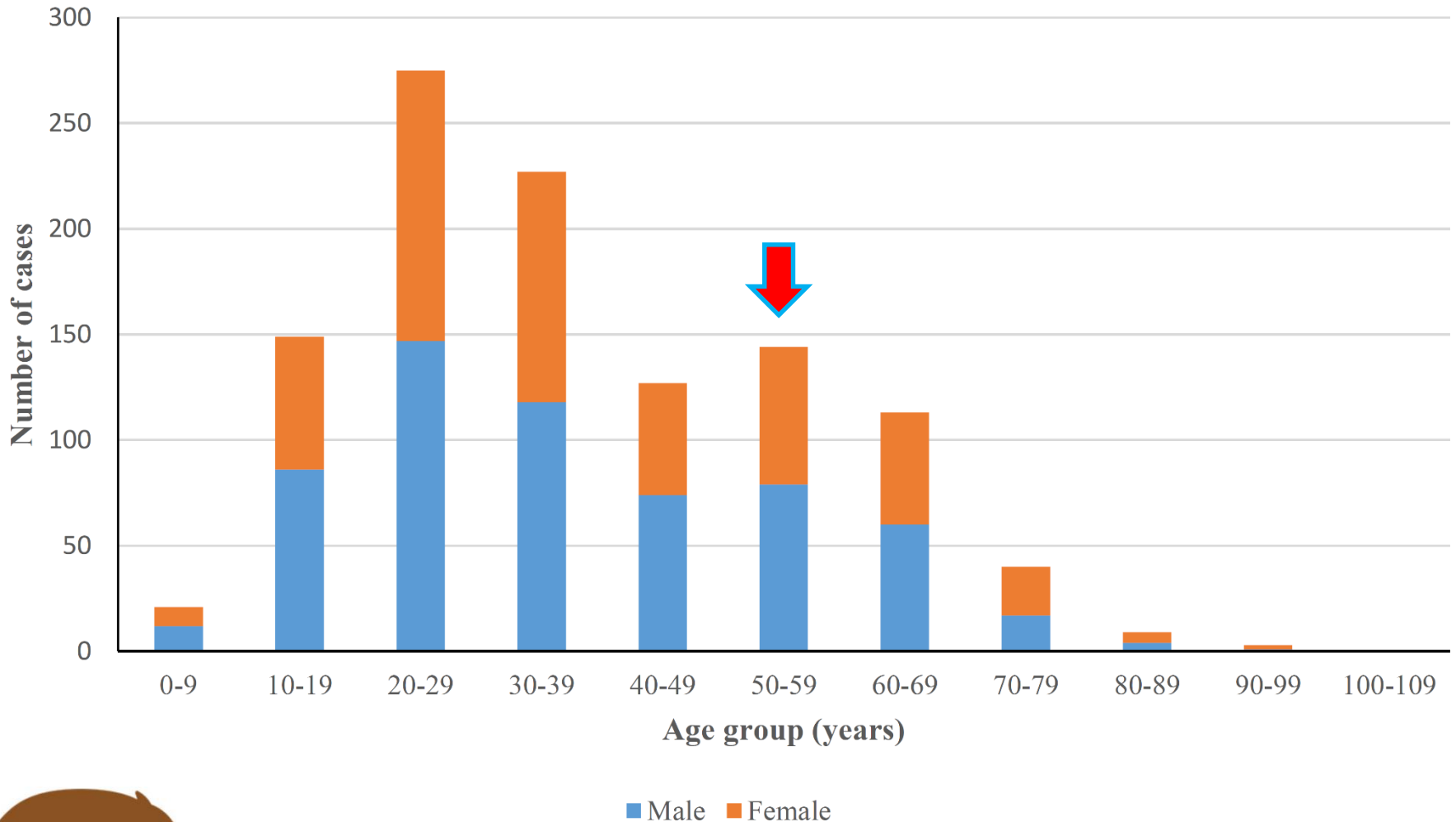
■ Male ■ Female

The above bar chart shows the age distribution of cases of COVID-19 in Hong Kong (as at 8 June 2020).



(as at 8 June 2020)

## Age distribution of cases of COVID-19 in Hong Kong

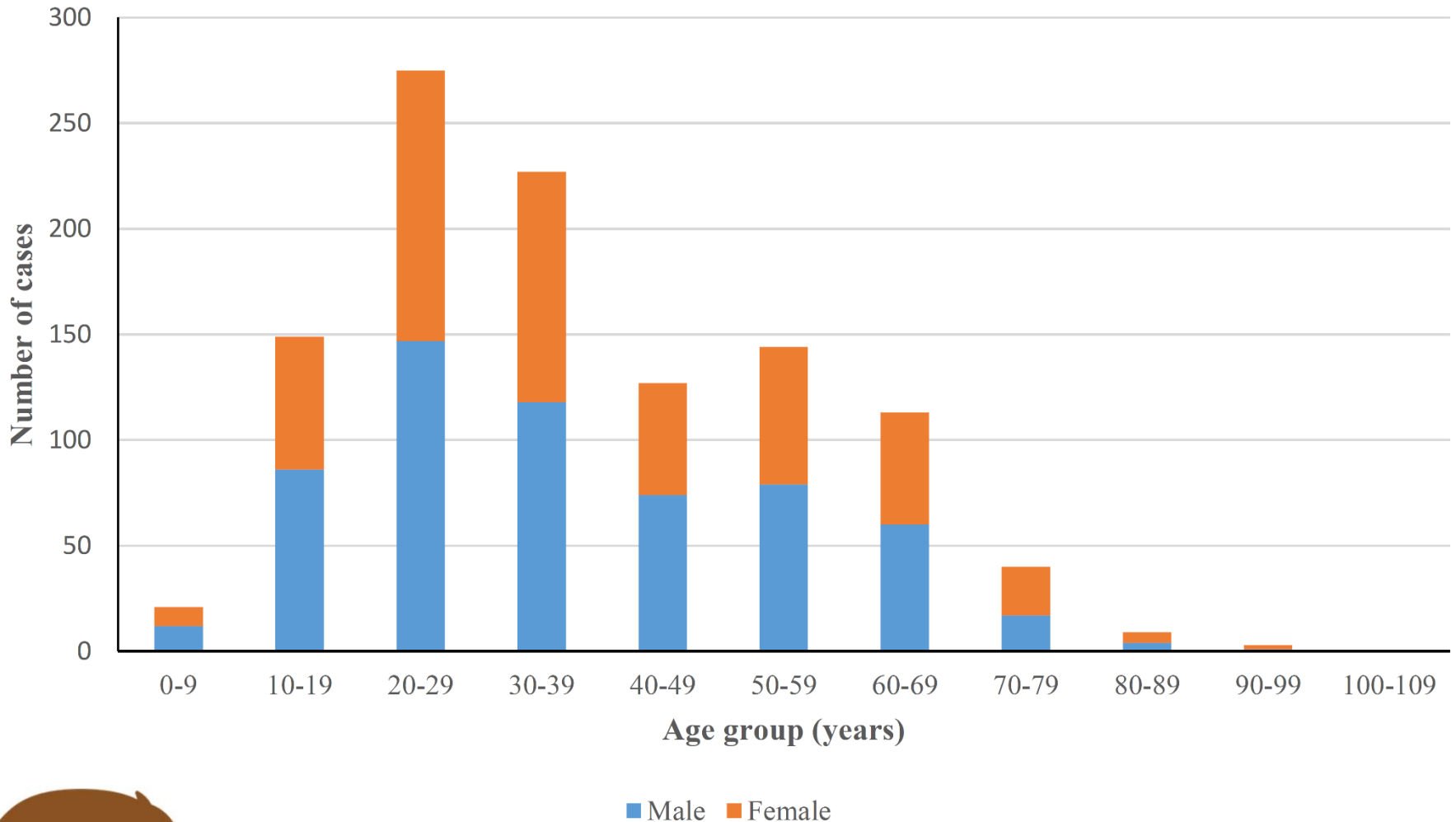


About how many cases are there in the age group of 50-59?

Answer:  
About 150

(as at 8 June 2020)

## Age distribution of cases of COVID-19 in Hong Kong

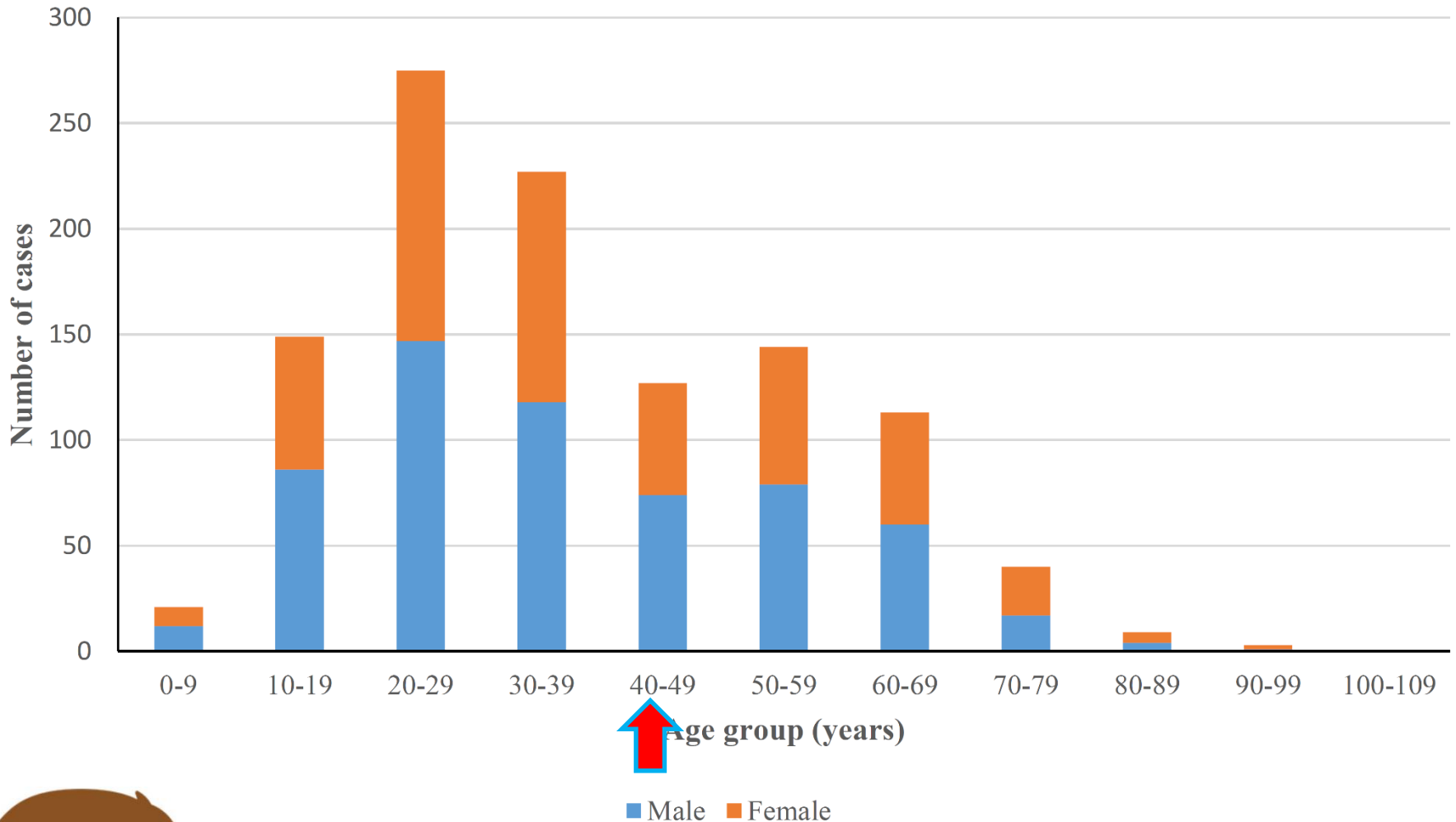


Which age group has more than 250 cases?

Answer:  
Age group 20-29

(as at 8 June 2020)

## Age distribution of cases of COVID-19 in Hong Kong



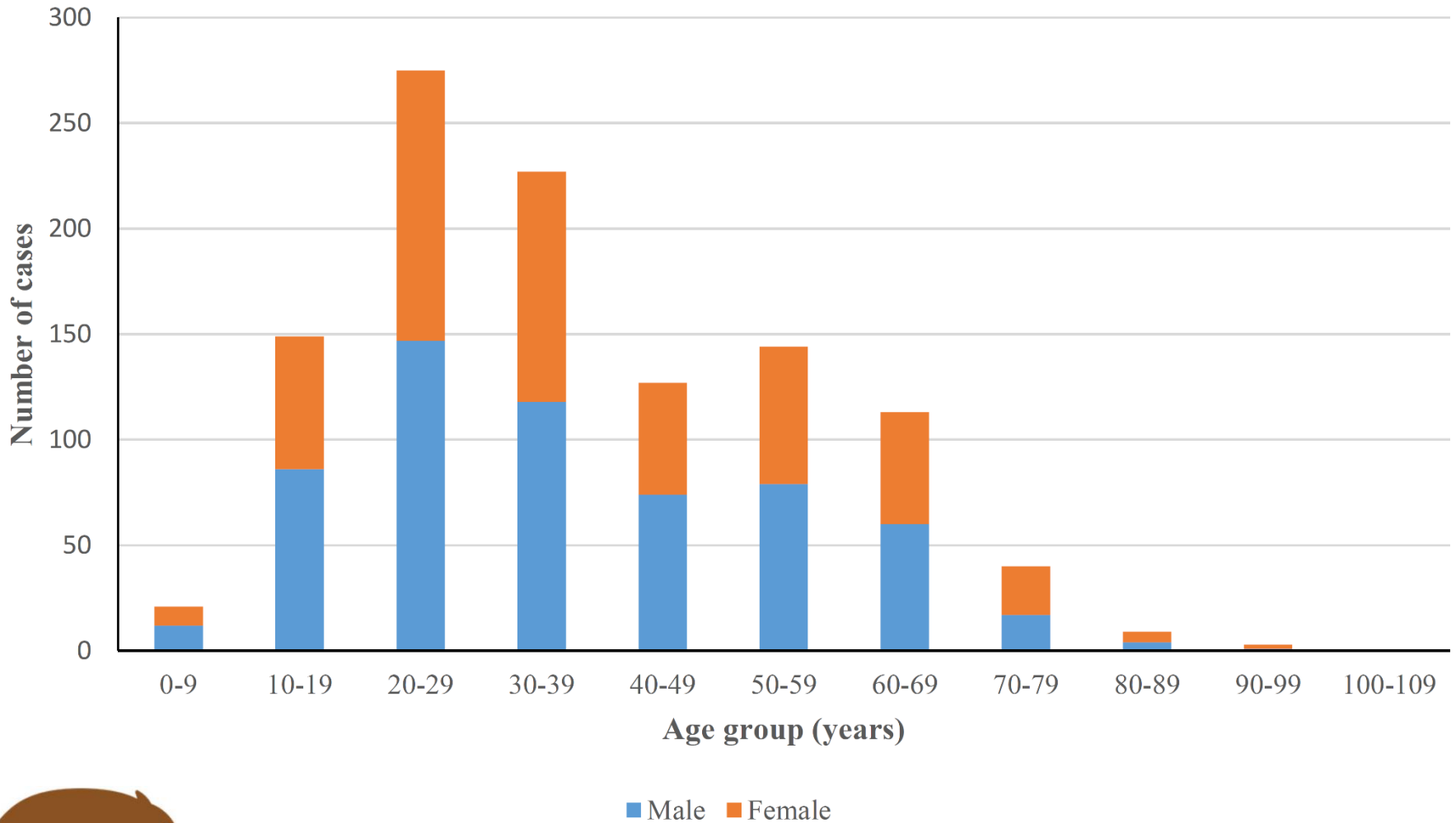
Regarding the cases in the age group of 40-49, are the male cases more than the female cases?

Answer:  
Yes



(as at 8 June 2020)

## Age distribution of cases of COVID-19 in Hong Kong

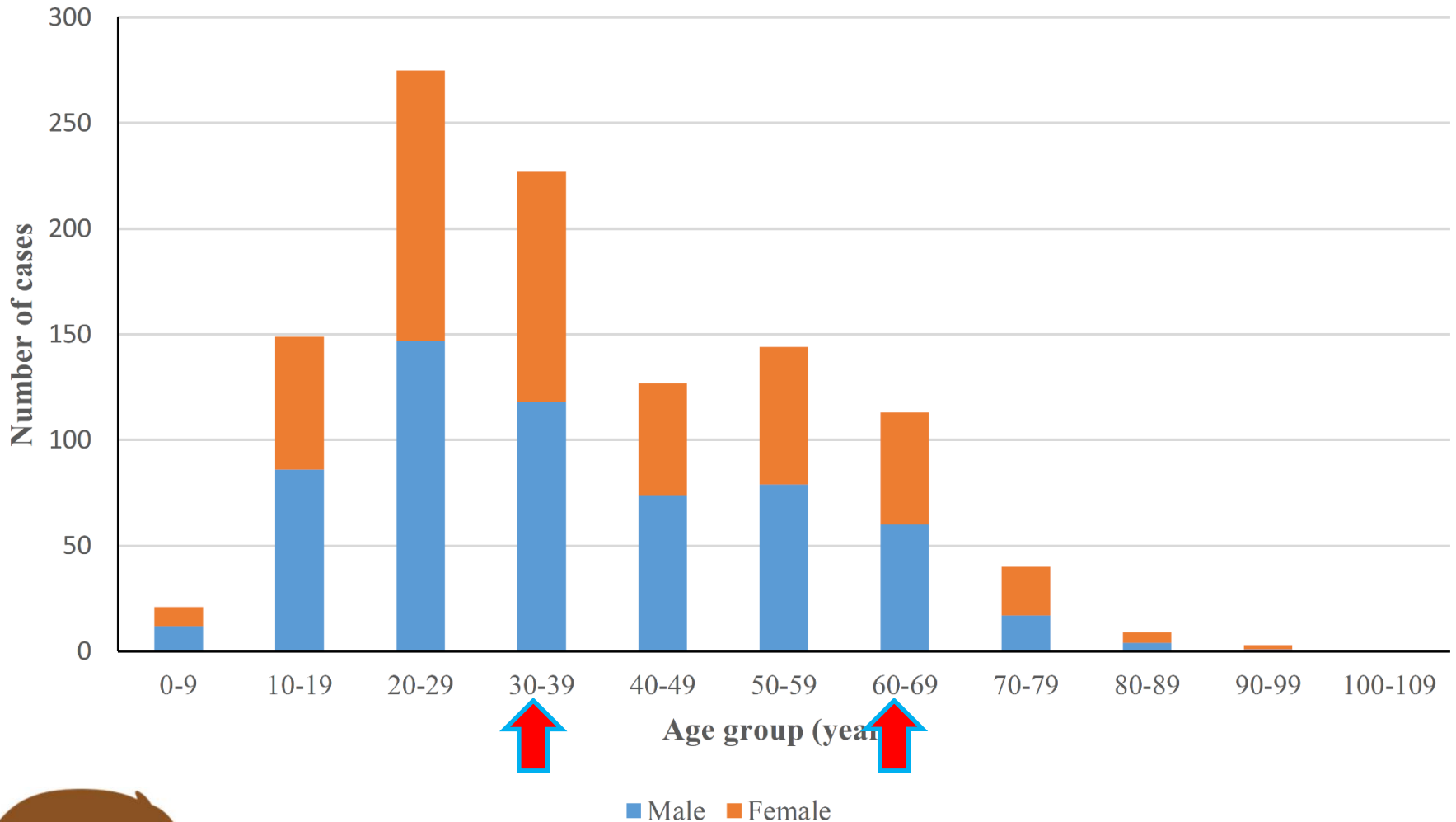


Which age groups have more than 100 male cases?

Answer:  
Age groups 20-29  
and 30-39

(as at 8 June 2020)

## Age distribution of cases of COVID-19 in Hong Kong



Estimate how many times (in integer) of the number of cases of the age group 60-69 is that of the age group 30-39?

Answer:  
About 2 times

## 新型冠狀病毒檢測每月數目 - 2020年1月1日至2020年6月1日

### Monthly Numbers of COVID-19 Viral Tests Performed – 1 January 2020 to 1 June 2020

月份 Month	檢測數目* Number of Tests*
2020年1月 January 2020	3,610
2020年2月 February 2020	26,983
2020年3月 March 2020	66,005
2020年4月 April 2020	66,337
2020年5月(暫定) May 2020 (Provisional)	75,099
至2020年6月1日(暫定) As of 1 June 2020 (Provisional)	3,958



This information shows the monthly numbers of COVID-19 viral tests performed (as at 1 June 2020).

\*衛生署公共衛生化驗服務處和醫院管理局共進行的檢測。

\*Tests performed by Public Health Laboratory Services Branch of the Department of Health and Hospital Authority.

新型冠狀病毒檢測總數： Total Number of COVID-19 Viral Tests Performed:	241,992
新型冠狀病毒檢測總數(每百萬人口計)： Total Number of COVID-19 Viral Tests Performed (per million population):	32,266

Source of Reference: COVID-19 Thematic Website- Together, We Fight the Virus: Statistics on Testing for COVID-19 in Hong Kong (as at 1 June 2020)

[https://www.chp.gov.hk/files/pdf/statistics\\_on\\_covid\\_19\\_testing.pdf](https://www.chp.gov.hk/files/pdf/statistics_on_covid_19_testing.pdf)

最後更新至2020年6月1日的臨時數據, 資料每周更新1次。

Last updated with provisional data up to 1 June 2020, the information is updated once a week.

新型冠狀病毒檢測每月數目 - 2020年1月1日至2020年6月1日

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In January 2020,  
3610 tests were  
conducted.

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How many tests  
were conducted in  
March 2020?

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Answer:  
66005

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The testing was obviously stepped up from March!

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Answer:  
66005

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We can use IT to construct a statistical graph to represent the numbers of tests performed from January to May 2020.

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However, the numbers are large and complicated, what should we do?

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We can round off the numbers to the nearest thousand to construct statistical graphs.

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Month	Number of Tests	Number of Tests (rounded to the nearest thousand)
January 2020	3610	
February 2020	26983	
March 2020	66005	
April 2020	66337	
May 2020	75099	

First, round off the data to the nearest thousand



Month	Number of Tests	Number of Tests (rounded to the nearest thousand)
January 2020	3610	4000
February 2020	26983	27000
March 2020	66005	66000
April 2020	66337	66000
May 2020	75099	75000

First, round off the data to the nearest thousand



	A	B	C	D
1				
2		<b>Month</b>	<b>Number of Tests (rounded to the nearest thousand)</b>	
3		January 2020	4000	
4		February 2020	27000	
5		March 2020	66000	
6		April 2020	66000	
7		May 2020	75000	
8				
9				
10				

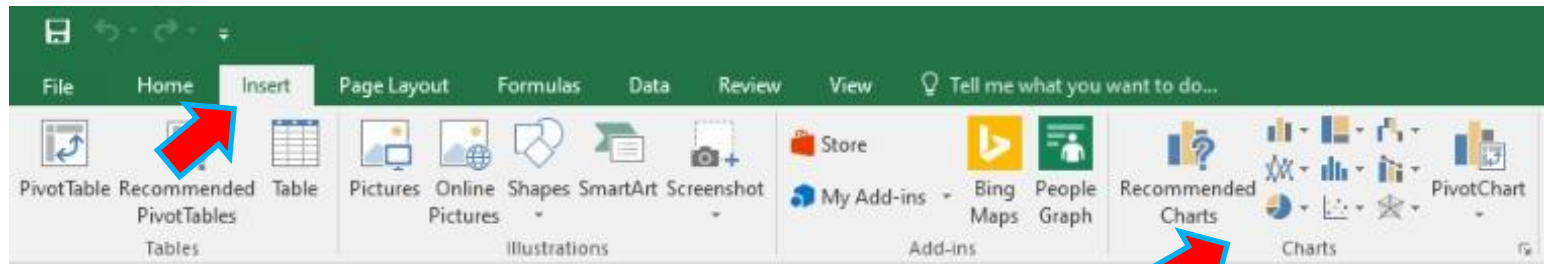
Input the data into a spreadsheet



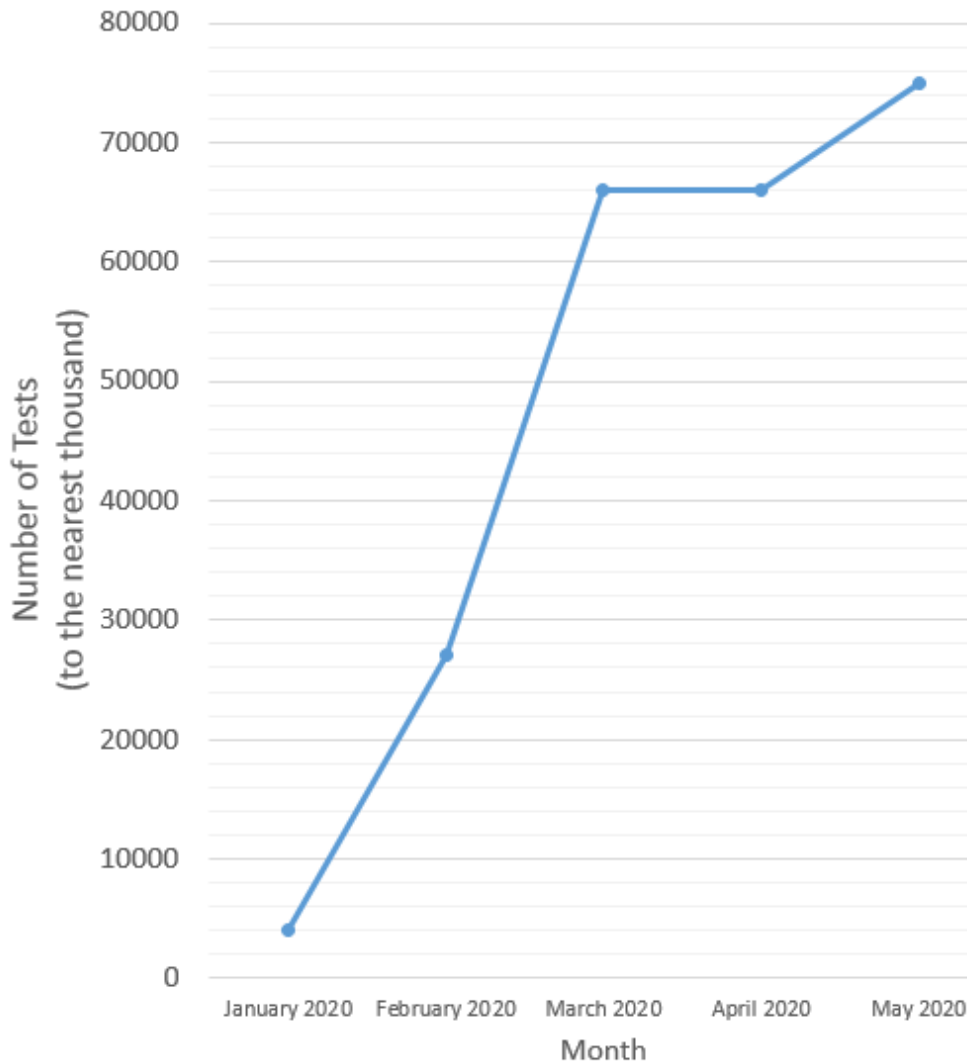
	A	B	C	D
1				
2		<b>Month</b>	<b>Number of Tests (rounded to the nearest thousand)</b>	
3		January 2020	4000	
4		February 2020	27000	
5		March 2020	66000	
6		April 2020	66000	
7		May 2020	75000	
8				
9				
10				



Select the data, press "Insert" and select appropriate statistical graphs (e.g. broken line graph) to represent the data.



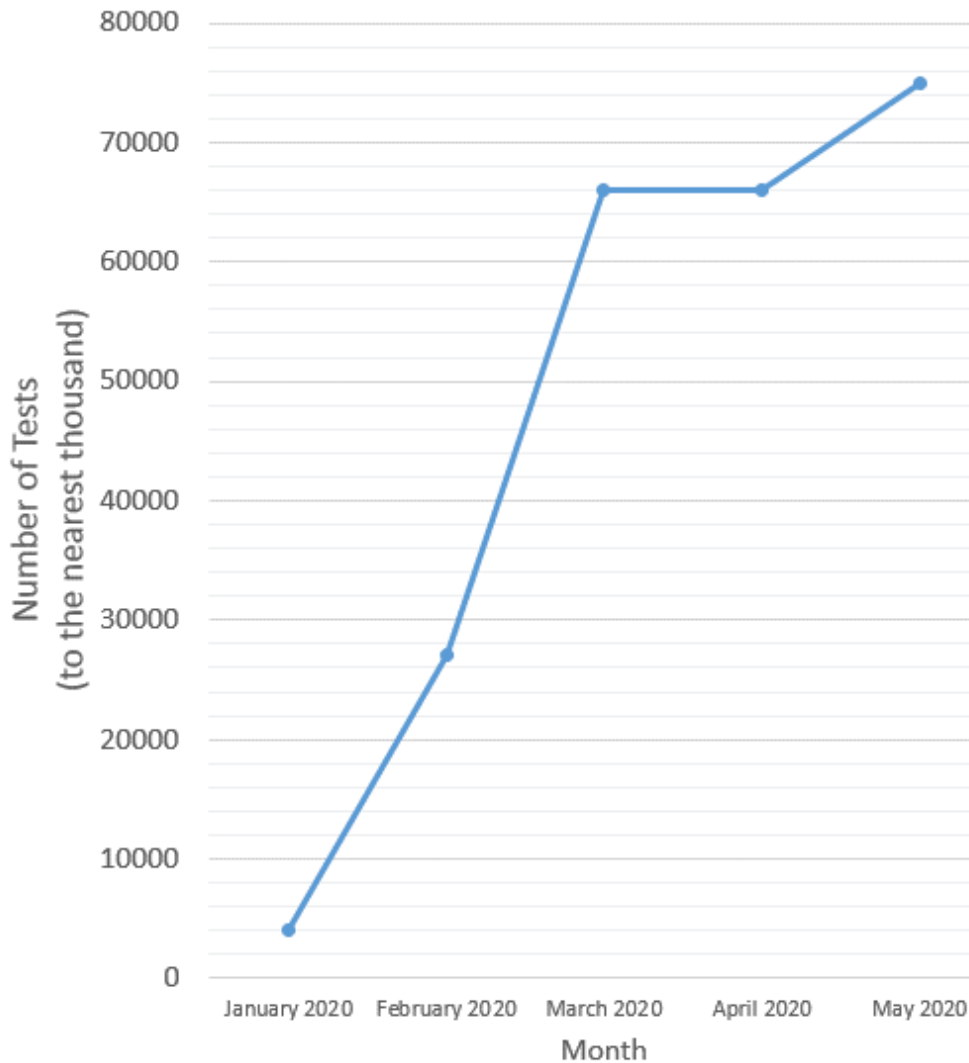
### Monthly numbers of COVID-19 viral tests performed in Hong Kong



We can make the graph more clear by choosing appropriate settings in "+" .



Monthly numbers of COVID-19 viral tests performed in Hong Kong



Apart from broken line graphs, which statistical graph(s) is/are also suitable for presenting these data?



Month	Number of Tests	Number of Tests (rounded to the nearest thousand)
January 2020	3610	4000
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March 2020	66005	66000
April 2020	66337	66000
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Can you estimate the average monthly number of tests from March to May?



Month	Number of Tests	Number of Tests (rounded to the nearest thousand)
January 2020	3610	4000
February 2020	26983	27000
March 2020	66005	66000
April 2020	66337	66000
May 2020	75099	75000



Can you estimate the average monthly number of tests from March to May?



I try to estimate in the following way:

Total number:

$$66000 + 66000 + 75000 \\ = 207000$$

Average number of test per month:

$$207000 \div 3 \\ = 69000$$

Month	Number of Tests	Number of Tests (rounded to the nearest thousand)
January 2020	3610	4000
February 2020	26983	27000
March 2020	66005	66000
April 2020	66337	66000
May 2020	75099	75000



You can also make some other reasonable estimation.



I try to estimate in the following way:

Total number:

$$66000 + 66000 + 75000 \\ = 207000$$

Average number of test per month:

$$207000 \div 3 \\ = 69000$$

Month	Number of Tests	Number of Tests (rounded to the nearest thousand)
January 2020	3610	4000
February 2020	26983	27000
March 2020	66005	66000
April 2020	66337	66000
May 2020	75099	75000



You may discuss with your classmates how can we estimate the average **daily** number of tests in these 3 months ?



I try to estimate in the following way:

$$\begin{aligned} &\text{Total number:} \\ &66000 + 66000 + 75000 \\ &= 207000 \end{aligned}$$

$$\begin{aligned} &\text{Average number of test per month:} \\ &207000 \div 3 \\ &= 69000 \end{aligned}$$

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From March to May 2020, professionals of Department of Health and Hospital Authority conducted on average about 69000 tests per month. We have to express our gratitude to them for their hard work.

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# Reference

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- Latest local situation of COVID-19  
[https://www.chp.gov.hk/files/pdf/local\\_situation\\_covid19\\_en.pdf](https://www.chp.gov.hk/files/pdf/local_situation_covid19_en.pdf)
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[https://www.chp.gov.hk/files/pdf/statistics\\_on\\_covid\\_19\\_testing.pdf](https://www.chp.gov.hk/files/pdf/statistics_on_covid_19_testing.pdf)