黎 sir 教室 A Lai Learning Center
HKDSE / IB Diploma / GCE AS AL / AP / SAT / HSC
IGCSE / GCSE / IB MYP / KS3 / MO / F.1 - F.6 / Y9 - Y13

2016 HKDSE PHYSICS Paper 1A

Suggested Solutions

Prepared by Andy Lai

HKDSE 5** Physics Teacher

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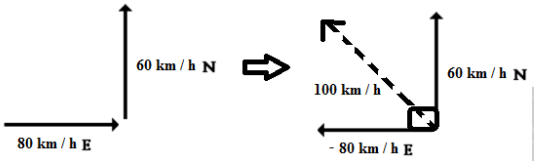
2016 HKDSE Physics Paper 1A Suggested Answers

1.	A	2.	B	3.	C	4.	A	5.	D
6.	D	7.	C	8.	C	9.	A	10.	C
11.	A	12.	A	13.	B	14.	B	15.	B
16.	C	17.	B	18.	D	19.	D	20.	D
21.	A	22.	C	23.	C	24.	D	25.	B
26.	D	27.	B	28.	A	29.	B	30.	A
31.	D	32.	A	33.	C				

Section A		
1.	A	黎 Sir 提提你 : ● Cork stopper ⇒ Cork is insulator ⇒ Reduces heat loss by conduction ● Silver coating ⇒ Good reflector of radiation and infrared is radiation ● Radiation can travel through vacuum ⇒ Vacuum cannot reduce heat loss by radiation
2.	B	黎 Sir 提提你 : ● Energy to melt 0.2 kg ice at 0 $^{\circ}C$ completely = $0.2\times3.34\times10^{5}$ = 66800 J ● Energy loss by 0.3 kg water from 50 $^{\circ}C$ to 0 $^{\circ}C$ = 0.3(4200)(50-0) = 63000 J < 66800 J ● Therefore, not all 0.2 kg ice at 0 $^{\circ}C$ melts but the temperature of all 0.3 kg water drops to 0 $^{\circ}C$ ⇒ Final temperature = 0 $^{\circ}C$, ice-water co-exists
3.	C	黎 Sir 提提你 : ● By $\overline{K.E.}=\frac{3RT}{2N_A}$ ⇒ $\overline{K.E.}\,\alpha\, T$ ⇒ % increase in $\overline{K.E.}$ = $\frac{(50+273)-(25+273)}{25+273}\times100\%\approx8.4\%$ ● Remarks: Remember the temperature must be Kelvin Temperature

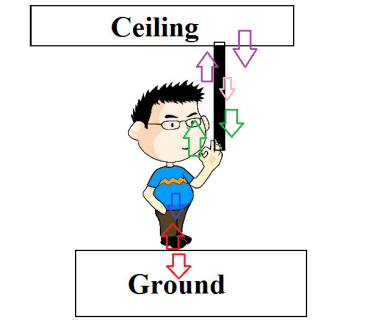
4.	**A**	**黎 Sir 提提你 :** ● **Speedometer of a car ⇒ Speed of a car at that instant!** **⇒ Instantaneous speed!** ● **Velocity is a vector ⇒ Both magnitude and direction are needed!** **⇒ But no direction cannot shown on the speedometer!** ● **Remarks: Some students claimed that they haven't seen any real speedometer of a car and so don't know what it is. Actually, It is common sense to know that the number displayed on the speedometer should be the speed of the car at that moment to remind the driver that he is speeding or not now.**

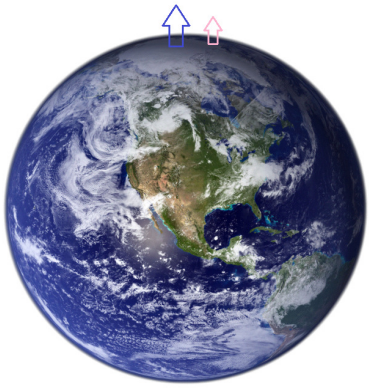
5.	**D**	**黎 Sir 提提你 :** ● **Change in velocity =** $\vec{v} - \vec{u}$ **(Vector subtraction!)** ●  ● **Remarks: Remember there is no vector subtraction but you can do addition of a negative ratio!**

6. **D**

黎 Sir 提提你 :

- **Please refer to the diagram below:**





- : $F_{\text{on Andy by the ground}}$ **= Normal Reaction!**
- : $F_{\text{on the ground by Andy}}$
- : $F_{\text{on Andy by the Earth}}$ **= Weight = W**
- : $F_{\text{on the Earth by Andy}}$
- : $F_{\text{on Andy by the rope}}$ **= Tension in string**
- : $F_{\text{on the rope by Andy}}$ **= F**
- : $F_{\text{on the ceiling by the rope}}$
- : $F_{\text{on the rope by the ceiling}}$
- : $F_{\text{on the rope by the Earth}}$ **= G**
- : $F_{\text{on the Earth by the rope}}$

- **Consider the free body diagram of Andy:**

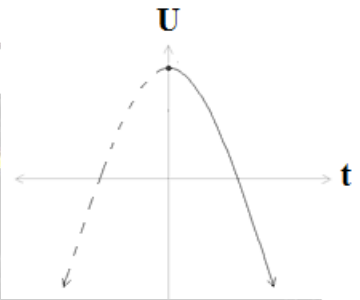
$F_{\text{on Andy by the Earth}} = F_{\text{on Andy by the ground}} + F_{\text{on Andy by the rope}}$

$\mathbf{W} = F_{\text{on the ground by Andy}} + \mathbf{F} \Rightarrow F_{\text{on the ground by Andy}} = \mathbf{W - F}$

- **Consider the free body diagram of the rope:**

$F_{\text{on the rope by the ceiling}} = F_{\text{on the rope by the Earth}} + F_{\text{on the rope by Andy}}$

$\Rightarrow F_{\text{on the ceiling by the rope}} = \mathbf{G + F}$

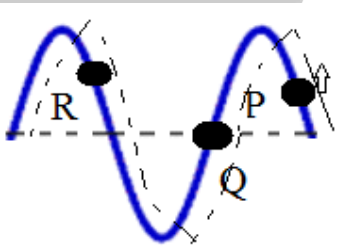
7.	**C**	**黎 Sir 提提你 :** ● **Given u = 2, v = 0, a = ?, s = 0.5 and t = ?** ● **By** $v^2 - u^2 = 2as \Rightarrow 0^2 - 2^2 = 2(a)(0.5) \Rightarrow a = 4\ m\ s^{-1}$
8.	**C**	**黎 Sir 提提你 :** ● **Loss in gravitational potential energy = Gain in kinetic energy** ● $-P.E. = \frac{1}{2}mv^2 \Rightarrow P.E. = -\frac{1}{2}m(u+at)^2 \Rightarrow P.E. = -\frac{1}{2}ma^2t^2 \Rightarrow$ **Parabola!** ● $\therefore$ **G.P.E. Vs Time $\Rightarrow$ Parabola opening downwards since** $-\frac{1}{2}ma^2 < 0$  **G.P.E. Vs time**
9.	**A**	**黎 Sir 提提你 :** ● **Work done on the load by the crane = Gain in G.P.E. of the load = Wy** ● **Work done against friction moving towards to point Q horizontally** **= Fx where F is the horizontal force on the load by the crane**

10.	**C**	**黎 Sir 提提你 :** ● **Given a particle projected horizontally ⇒ initial vertical velocity = 0** $m\ s^{-1}$ ● **In vertical direction:** **u = 0, v = ?, a = -9.81, s = 0.0125, t = t** ⇒ $0.0125 = \frac{1}{2}(-9.81)t^2$ **… (1)** **u = 0, v = ?, a = -9.81, s = 0.05, t = 2t** ⇒ $0.05 = \frac{1}{2}(-9.81)(2t)^2$ **… (2)** ● **Solving (1) & (2) gives t ≈ 0.005 s ⇒ Speed projection =** $\frac{0.025}{0.005} = 0.5$ $m\ s^{-1}$
11.	**A**	**黎 Sir 提提你 :** ● **Uniform meter rule ⇒ Centre of mass at the center of the beam** ● **Two tensions = 1 + 1 = 2 N and the beam is in equilibrium ⇒ Weight = 2 N** ● **By Principle of moment,** **∑clockwise moment at any point = ∑anticlockwise moment at that point** **2(0.5) + 4(x) = 2.3(1)** **x = 0.325** ● **∴ 32.5 meters from the left end of the uniform meter rule.**

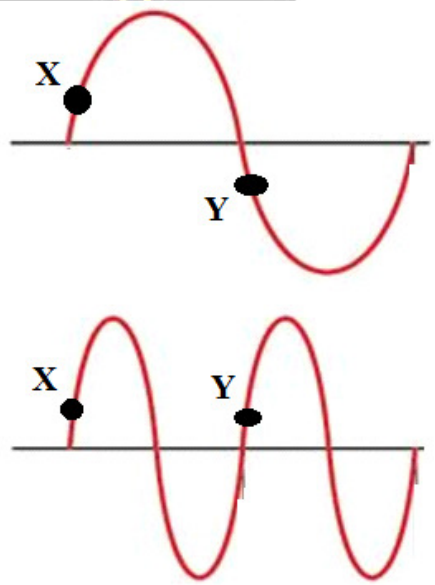
12.	**A**	**黎 Sir 提提你 :** ● **By 3rd law, $F_{A\,on\,B} = F_{B\,on\,A}$, equal in magnitude and opposite in direction** **$\Rightarrow$ Force on Q by P = Force on P by Q** ● **Total momentum of the two marbles is conserved provided that there is no external forces acting on the two marbles, which is nothing to do with perfectly elastic, elastic or inelastic collision** ● **Kinetic energy lost by P** **= Kinetic energy gained by Q + Heat loss to surroundings**

13.	**B**	**黎 Sir 提提你 :** ● $a = \omega^2 r \Rightarrow a \ \alpha \ \text{r} \ \text{ if } \ \omega = cons\tan t$ ● $a_P : a_Q = r : \frac{r}{2} \Rightarrow a_P : a_Q = 1 : \frac{1}{2} \Rightarrow a_P : a_Q = 2 : 1$

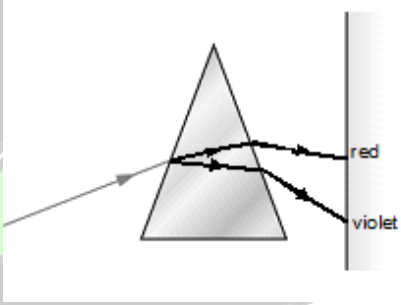
14.	**B**	**黎 Sir 提提你 :** ● **By Newton's 2nd Law:** $\frac{GMm}{r^2} = m\omega^2 r \Rightarrow \frac{GM}{r^3} = \frac{4\pi^2}{T^2} \Rightarrow T = \sqrt{\frac{4\pi^2 r^3}{GM}}$ ● $\therefore \ T = \sqrt{\frac{4\pi^2 (7.2\times10^6)^3}{(6.67\times10^{-11})(6.0\times10^{24})}} \approx 6067.9 \approx 1.7 \ hours$

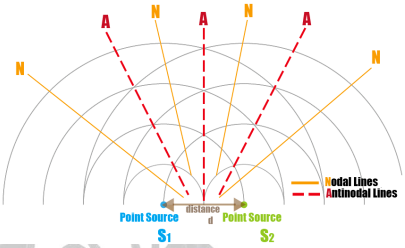
15.	**B**	**黎 Sir 提提你 :** ● **Particle P is moving upwards ⇒ Draw dotted line for next moment below** **⇒ The wave is moving to the right instead**  **Next moment of the wave: Dotted line** ● **Form the graph above showing the next moment of wave** **⇒ P and R is moving upwards** ● **Q is at equilibrium ⇒ Q is the particle having the fastest speed now!** ● **In a progressive wave ⇒ The amplitude of all particles are the same!**
16.	**C**	**黎 Sir 提提你 :** ● **Crest to Crest horizontal distance = Wavelength = 20 m** ● $v = f\lambda \Rightarrow v = (\frac{1}{T})(\lambda) \Rightarrow v = (\frac{1}{2\times 2})(20) \Rightarrow v = 5\ m\ s^{-1}$ ● **Remarks: Peak to Peak value is nothing to do with the velocity of the wave since the amplitude is nothing to do with the velocity of the wave**

17.	**B**	**黎 Sir 提提你 :** ● **Water-glass boundary** $\Rightarrow$ $(1.33)\sin\theta = n_g \sin\theta$ **… (1) (Do you know why?)** ● **Glass-air boundary** $\Rightarrow$ $n_g \sin\theta = (1)\sin 90^\circ$ **… (2) (Do you know why?)** ● **Combine (1) and (2) together gives:** $(1.33)\sin\theta = (1)\sin 90^\circ \Rightarrow \theta \approx 48.8^\circ$

18.	**D**	**黎 Sir 提提你 :** ● **Stationary wave** $\Rightarrow$ **Notes at the fixed ends** ● **Constant medium** $\Rightarrow$ **Fixed velocity of the wave** ● **Frequency of wave x 2** $\Rightarrow$ **Wavelength x (1/2)** $(\therefore v = f\lambda = cons\tan t)$ ● **Amplitude is nothing to do with the wave speed, frequency and wavelength** ● **However, Distance between X and Y changes from 0.5 λ to 1 λ** $\Rightarrow$ **In phase!**  **<u>Frequency of the vibrator increases to 2.8</u>**

19.	D	黎 Sir 提提你 : ● Diffraction is the bending of wave through a pinhole, a sharp edge and a slit. ● Remarks: ↑ Wavelength or ↓ gap ⇒ Bending more marked

20.	D	黎 Sir 提提你 : ● Different colours have same speed in air or vacuum. ● However, different colours have different speed in other media. ● Moreover, different colours have different refractive index in other media. ● For example, Red light travels faster than Blue light in glass. ● Red light bends the least towards the normal and leave the prism first while violet light bends the most towards the normal and leave the prism. ● Therefore, the white light will be separated into seven colours: Red, Orange, Yellow, Green, Blue, Indigo, Purple. ● This is so-called "Dispersion of light". 

21.	A	黎 Sir 提提你 : ● Constructive interference + 2 sources in phase ⇒ Path difference = n λ where n = 0, 1, 2, 3, 4… any non-zero integer ● We only know P is not located on the perpendicular bisector of S1 and S2 ⇒ We cannot know the definite value of the path difference, maybe it is equal to λ, 2λ, 3λ, etc. ● All points on the antinodal lines ⇒ Constructive interference occur! All points on the nodal lines ⇒ Destructive interference occur! Therefore, there should be at least one point of minimum loudness (destructive interference) can be detected between O and P.  Antinodal lines and nodal lines of interference pattern of 2 in-phase sources ● If two sources are in antiphase ⇒ Constructive interference pattern and destructive interference pattern will be interchanged! ● Remarks: There are always questions about interference pattern, and the difficulty is getting higher, watch out!

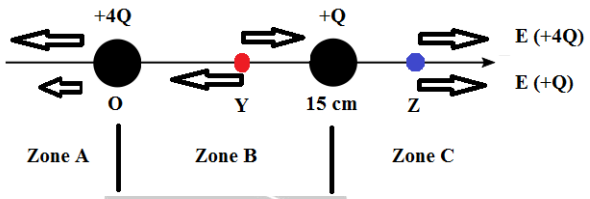
22.	**C**	**黎 Sir 提提你 :** ● **By lens formula: $\frac{1}{u}+\frac{1}{v}=\frac{1}{f}\Rightarrow$, put u = +100, f = +10 gives v = +11.1** ● **By lens formula: $\frac{1}{u}+\frac{1}{v}=\frac{1}{f}\Rightarrow$, put u = +90, f = +10 gives v = +11.25** ● **Therefore, the image is moving away from the lens** ● **How about the speed of object and image? Assume time = 1 s** ● **The speed of the object = 100 – 90 = 10 m / s** ● **The speed of the image = 11.25 – 11.1 = 0.15 m / s <<< 10 m / s** ● **Remarks: you can solve this problem by drawing the ray diagram on the graph paper in scale, but it may takes a longer time, but a easier way to do so.**

23.	**C**	**黎 Sir 提提你 :** ● **Ultrasound cannot sterilize drinking water while UV light can do so.** ● **Ultrasound can detect cracks in railway tracks since its extreme short wavelength can make its diffraction not significant $\Rightarrow$ Cracks detected!** ● **Ultrasound can break up the kidney stones.**

24. **D**

黎 Sir 提提你 :

- **Refer to the diagram below:**
- **E-field is a vector ⇒ Both magnitude and direction!**
- **Zone A: Two E-field is not possible equal to each other although their direction is the same (both to the left), the magnitude of E-field by +4Q must be larger than that of +Q sine any points in Zone A is closer to +4Q and the charge of +4Q is larger.**
- **Zone B: Two E-field is not possible equal to each other since their direction is opposite to each other at any point of zone B. However, there exists a point Y closer to +Q in zone B where the magnitude of E-field by +4Q equals that of +Q since Y in Zone A is closer to +Q and the charge of +Q is smaller. Unfortunately, Magnitude equal only, direction is opposite!**
- **Zone C: Two E-fields are in same direction, both pointing to the right. There exists a point Z closer to +Q in zone C where the magnitude of E-field by +4Q equals that of +Q since Z in Zone A is closer to +Q and the charge of +Q is smaller.**
- **Let the distance between +4Q and Z be x > 15 cm**
- **By** $E = \frac{Q}{4\pi\varepsilon_o r^2} \Rightarrow E_{+4Q} = E_{+Q} \Rightarrow \frac{+4Q}{4\pi\varepsilon_o (x)^2} = \frac{+Q}{4\pi\varepsilon_o (x-15)^2} \Rightarrow$ **x = 30 or 10 (rej.)**
- **Therefore, x = 30 cm**



25.	**B**	**黎 Sir 提提你 :** ● **Since the difference of resistance between the upper path and the lower path is very large $\Rightarrow$ $10\,\Omega\,//10\text{k}\,\Omega \approx 10\,\Omega$ while $10\text{k}\,\Omega\,//(10\text{M and } 10\,\Omega) \approx 10\text{k}\,\Omega$** ● **The smallest equivalent resistance between a and b $\approx$ 10 ohms** ● **The largest equivalent resistance between a and b $\approx$ 10k ohms** ● **Therefore, the range of total resistance between a and b is 10 to 10k ohms**
26.	**D**	**黎 Sir 提提你 :** ● **For parallel circuit, Comparing the power $\Rightarrow$ $P = \frac{V^2}{R}$ ($\because$ //$\Rightarrow$ Same voltage)** ● **$\uparrow P \Rightarrow \downarrow R$ ($\because$ Same Voltage!) and by $V = IR$, $\downarrow R \Rightarrow \uparrow I$** ● **X // Y $\Rightarrow$ $V_x = V_y$, X is brighter than Y $\Rightarrow$ $P_x > P_y$ $\Rightarrow$ $R_x < R_y$ $\Rightarrow$ $I_x > I_y$** ● **$V_x = V_y$ means for every unit charge passing, the electrical energy dissipated by X is equal to that dissipated by Y.** ● **$P_x > P_y$ means in 1 s, electrical energy dissipated by X is greater than that dissipated by Y.** ● **$I_x > I_y$ means 1 s, number of charges flowing through X is greater than that flowing through Y.** ● **Remarks: How about X and Y are connected in series?**

27. **B**

黎 Sir 提提你 :

- For simply, assume the resistance of each light bulb = 10 ohms
- P // Q $\Rightarrow$ Equivalent resistance across P or Q = (10)(10)/(10 + 10) = 5 Ω
- P // Q and in-series with R $\Rightarrow$ $V_R \approx 6.66V$ and $V_{P//Q} \approx 3.33V$
- S in-series with T $\Rightarrow$ $V_S = 5V$ and $V_T = 5V$
- Therefore, if the voltage V gradually increases, bulb R will burn out first since $P = \frac{V^2}{R}$, given R = constant, Voltage across it is the largest (6.66V)

28. **A**

黎 Sir 提提你 :

- Carbon dioxide emission = (1.5/1000)(16)(30)(0.8) = 0.576 kg

29. **B**

黎 Sir 提提你 :st[r

- Search coil $\Rightarrow$ Study magnified field strength induced by a.c.
  (Mutual Induction!)
- Search coil plane $\perp$ Field lines $\Rightarrow$ All field lines through coil plane
  $\Rightarrow$ ↑ Accuracy of the measurement
- ↑ Frequency of a.c. $\Rightarrow$ ↑ $\frac{\Delta B}{\Delta t}$ $\Rightarrow$ ↑ Inducded Voltage on search coil
  $\Rightarrow$ ↑ Sensitivities of the measurement
  $\Rightarrow$ ↑ Accuracy of the measurement
- The magnetic field strength of Earth's magnetic field is constant
  $\Rightarrow$ No induced voltage on the search coil $\Rightarrow$ No effect!

30.	**A**	**黎 Sir 提提你 :** ● $V_{r.m.s.} = \frac{V_{peak\ value}}{\sqrt{2}}$ **for sinusoidal a.c. only.** $\Rightarrow$ $V_{peak\ value} \times \frac{1}{2}$ $\Rightarrow$ $V_{r.m.s.} \times \frac{1}{2}$ ● **Remarks: r.m.s. value is always nothing to do with frequency!**

31.	**D**	**黎 Sir 提提你 :** ● **Power input = VI = 220 x 1.5 = 55 W** ● **Power output = VI = 22 x 2 = 44 W** ● **Efficiency % = 44 / 55 = 80%**

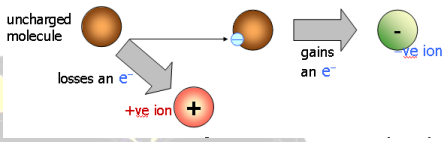
32. **A**

黎 Sir 提提你 :

1. When nuclear radiation (α, β and γ) passes through a gas,

- Nuclear radiation collides with gas particles.
- It removes electrons from some gas molecules.
- The electrons removed will attach to other neutral gas molecules.
- Gas molecules are ionized! Positive and negative ions always form in pairs.
- Gas Ions are mobile and free to move
- Therefore, ionized gas can conduct electricity

2. Therefore, ionizing power: $\alpha > \beta > \gamma$



Air molecules ionized by radiation

- Gamma radiation intensity can only be decreased by a factor of ½ if it is blocked by 25 mm lead! ⇒ Never die!
- Only alpha and beta radiation undergo deflection in an electric field.

33. **C**

黎 Sir 提提你 :

- $N_x(\frac{1}{2})^8 = N_y(\frac{1}{2})^6 \Rightarrow \frac{N_x}{N_y} = \frac{4}{1} \Rightarrow N_x : N_y = 4:1$

The end.

黎 sir 簡介 Andy Lai BEng CUHK, MIEEE

5 ★★ Physics Economics

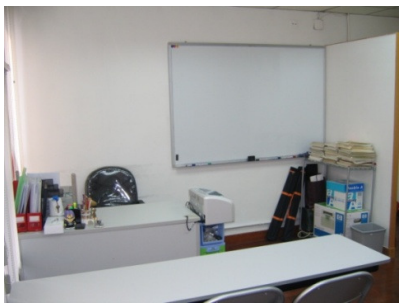
- ✧ 畢業於香港中文大學電子工程學系，黎 sir 教室創辦人之一.
- ✧ 超過 15 年教授中學文憑 / IB Diploma / GCE / HSC / SAT / AP / GCSE / IGCSE / IB MYP 課程經驗.
- ✧ 為了與學生一起面對中學文憑試, 黎 sir 親身上陣, 以實力於物理科及經濟科奪取 5**, 證明寶刀未老.
- ✧ 熟悉出題趨勢，教授考試取分技巧；鼓勵同學獨立思考，增強同學理解能力.
- ✧ 善用生活化例子講解，教法生動，增加學習趣味；深入淺出，明白學生學習上的困難和需要.
- ✧ 精心編制筆記，適合中文和英文中學學生就讀；精心編制練習和試題，協助同學盡快掌握答題技巧.
- ✧ 黎 sir 在中學和大學時代已是一名傑出學生，曾獲取的多項學業上和運動上的獎學金及獎項.
- ✧ 曾代表香港參加國際性運動比賽，取得優異成績，又讀得又玩得，絕不是死讀書的書呆子.
- ✧ 任教科目：所有數學科，物理科，化學科，生物科，經濟科，商業科.

黎 sir 教室學生佳績: Excellent Results

- ✧ 首屆香港中學文憑 (HKDSE)，多位學生取得 5/5*/5**級以上佳績. 更有學生考獲 5 科 5**級 2 科 5*級 1 科 5 級優異成績，在全港 72620 考生中，排名 28，入讀港大醫學院.
- ✧ 英國高考 (GCE AS/AL)，多位學生取得 A*/A 最高級別，更有學生考獲 5 科 A*.
- ✧ 國際文憑 (IB Diploma)，多位學生取得 6 / 7 級別，更有學生取得總分 40 分以上.
- ✧ 英國會考 (IGCSE / GCSE)，多位學生取得 A / A*成績，更有學生取得 8 科 A*。
- ✧ 加拿大大學預科 (CESI) 數學課程 MCV4U，取得 98 / 100, 99 / 100 成績。
- ✧ 學生成功拔尖 (EAS)，提早入讀港大理學院和中大法律學院.
- ✧ 香港中學會考 (HKCEE)，多位學生取得 20 分以上佳績.
- ✧ 保加利亞國際數學競賽 (BIMC 2013) 隊際賽金牌.
- ✧ 奧數華夏杯/港澳杯/華杯，多位學生取得特等獎/金獎/一等獎/全港第二名.
- ✧ 還有更多，恕不能盡錄，詳情請瀏覽以下網址: www.andylai.hk/result.htm

黎 sir 教室課程特色:

- ✧ 小組教學 (1 – 6 人)，導師親身教學；照顧每位學生需要，事半功倍.
- ✧ 精心編制筆記，練習以近 30 年本地和外國公開試題為藍本.
- ✧ 概念理解，取分技巧並重；協助同學盡快掌握答題技巧.
- ✧ 歡迎自由組合小組上課，時間及課程內容編排更有彈性.
- ✧ 詳情請瀏覽以下網址: www.andylai.hk



黎 sir 教室 A Lai Learning Center

HKDSE / IB Diploma / GCE AS AL / AP / SAT / HSC

IGCSE / GCSE / IB MYP / KS3 / MO / F.1 – F.6 / Y9 – Y13

資深中學補習導師 小組補習 事半功倍!!!

黎 sir 簡介 *Andy Lai* BEng CUHK, MIEEE

5** Physics Economics

- ✧ 畢業於香港中文大學，黎 sir 教室創辦人之一.
- ✧ 超過 15 年教授 中學文憑 / IB Diploma / GCE / HSC / SAT / AP / GCSE / IGCSE / IB MYP 課程經驗.
- ✧ 為了與學生一起面對中學文憑試, 黎 sir 親身上陣, 以實力於物理科及經濟科奪取 5**, 證明寶刀未老.
- ✧ 現於黎 sir 教室任教補習班，學生就讀於英文中學，中文中學，國際學校及英國留學生.
- ✧ 熟悉近年出題趨勢，教授考試取分技巧；鼓勵同學獨立思考，增強同學理解能力
- ✧ 善用生活化例子講解，教法生動，增加學習趣味；深入淺出，明白學生學習上的困難和需要.
- ✧ 中英對照筆記, 適合中文和英文中學學生就讀；精心編制練習和試題, 協助同學盡快掌握答題技巧.
- ✧ 黎 sir 在中學和大學時代已是一名傑出學生，曾獲取多項學業上和運動上的獎學金及獎項；曾代表香港參加國際性運動比賽，取得優異成績，「又讀得又玩得」，絕不是死讀書的書呆子.
- ✧ 黎 sir 在就讀大學時曾於全球最大美資電腦公司任實習生超過一年，大學畢業後旋即於全港大型英資電腦公司，負責主理該公司所代理的全球大型美資電腦公司儲存系統銷售業務.
- ✧ 於短短半年內將該產品線銷售業績提升超過 50%. 同時更被公司評選為"傑出表現員工 Outstanding Performer"，成功將書本上的知識靈活運用於工作上.
- ✧ 黎 sir 為了教學理想，毅然辭去工作，全身投入教學事業，希望將自己的一套學習方法教授學生

黎 sir 教室 課程特色

- ✧ 小組教學 (1 – 6 人)，導師親身教學；照顧每位學生需要，事半功倍.
- ✧ 精心編制筆記，練習以近 30 年本地和外國公開試題為藍本.
- ✧ 概念理解，取分技巧並重；協助同學盡快掌握答題技巧.
- ✧ 歡迎自由組合小組上課，時間及課程內容編排更有彈性.
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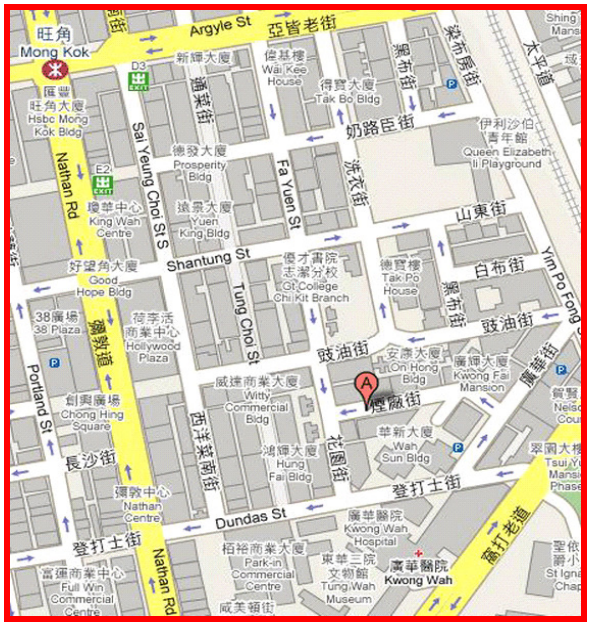

地鐵:	旺角 E2 出口，油麻地 A2 出口
小巴:	1, 1A, 2, 3C, 6, 6C, 6F, 9, 30X, 35A, 41A, 42A, 60X, 63X, 68X, 69X, 81S, 87D, 93K, 95, 104, 117, 203, 212, 230X, 234P, 234X, 238P, 238S, 259B, 270P, 281A
小巴:	21K, 74, 74S

黎Sir教室 A Lai Learning Center

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