



Foreword

“Give a man a fish – and you feed him for a day; teach him to fish – and you feed him for a lifetime.”

— author unknown

Every one of the **guide** series is a *fisherman* book – i.e., they teach *concepts*. Each step in the *concept* is thoroughly explained and illustrated further by *worked examples* and *problems*.

The **critical guide** fundamental series ❶ is best suited for beginners. Although these *guides* are complete on their own, we do encourage students who become more familiar with the subject matter, to progress to more *extensive guides*. It is not unusual for certain schools wanting to broaden their students’ minds to teach beyond the actual examination (exam) syllabus *per se*. For this, students are best advised to immediately use the **complete guide** extensive series ❶.

For students with *extreme intelligence*, they will find the *guides* a little too cumbersome to refer. They should then use the *fisherman fast-learner* books, i.e., books that help prepare students taking the actual exams quickly. These books provide the **critical study notes** ❷ to every single exam concepts.

Knowing how to employ the fishing rod, line, sinker, hook and bait to fish is not enough; one still needs the *encyclopedia of fish*, i.e., the **challenging learn-by-example** (LBE) fundamental series ❸. Out there, there would be many kinds of fish; each requires slightly different method to catch – for example, capturing a shark definitely demands a different technique from that of catching a salmon. In the same way, one must get familiar with the various exam question-types so that one can confidently score. The *challenging LBE* series provides training up to ordinary exam-standard. Again, for students going beyond, the **demanding LBE** extensive series ❸ is a must-have.

Lastly, one should not neglect fundamental *work-out* with our ever-popular **challenging drill questions** (with answer keys only) ❹ and **solutions** ❺. Again for students with *extreme intelligence*, do complement learning with our **oh-my-god (omg) drill questions** (with solutions) ❻, an all-embracing extensive *work-out* series (coming soon).

For teachers, please use our trade book, the **teacher’s reference** ❷. This series provides the essential approaches and exam reports that make a difference in the grounding of student’s sense of reality to their exams.

Each year, popular “past-years exam questions” books are usually printed without accompanying accurate solutions, mark schemes and appropriate examiners’ requirements; for this lack, please use our fully **complete yearly solutions** series ❸ (there are no questions, only solutions). Due to popular demand, we have reinforced some of these commonly-asked-exam-question-types as **challenging practice questions** ❹ and **solutions** ❺. Just before taking one’s actual exams, one can attempt our **challenging examinations questions** (intentionally published without answer keys) ❹ and **solutions** (with mark schemes & exam reports) ❷.

Knowledge is power. Total knowledge, acquired through accurate education, is absolute power. But, there are many publications out there that provide **false information** and it may be difficult for students to separate **accurate education** from this *false information*. The trust in our extremely rigorous publishing control allows us to be confident in the **reliable truth** the student would receive.

Latest and continuous updates and errata are available at <www.yellowreef.com> .

All of the above books are created to fulfill the urgent need in mastering the subject matter most efficiently. It will undoubtedly provide a firm platform for the student to score extremely well in one’s exams. But knowledge at its highest form is not a science but an art; to do this, please use our **journey** books ❶ (coming soon) – the ultimate mastery of the art form.

“Using the right tool at each appropriate stage of exams preparation saves time. No point trying to pretend that a simple screwdriver would suffice at all situations.”

“If I have seen yonder, it is by standing on the shoulders of giants.” – Sir Isaac Newton

“The actual journey of inspiration only begins when one takes the first step towards learning humbly from the masters.” – paraphrased by the authors

“The human form factor remains unchanged, so learn it, love it and master it and you lord over all things.” – Chris Hughes

“Look at the examples around you, therefore, never chase after money. If truth be told, it is one’s passion that gets the ultimate prize. Derive first the pleasure of creating things that are untouchable by all principalities.” – Thomas Bond

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MARK SCHEME LEGENDS

Marks are of the following four types:

- M** Method mark, awarded for a valid method applied to the problem. Method marks are not lost for numerical errors, algebraic slips or errors in units. However, it is not usually sufficient for a candidate just to indicate an intention of using some method or just to quote a formula; the formula or idea must be applied to the specific problem in hand, e.g. by substituting the relevant quantities into the formula.
- Correct application of a formula without the formula being quoted obviously earns the M mark and in some cases an M mark can be implied from a correct answer.
- C** Calculation/Compensation marks are interchangeable with Method marks, but are more specific to marks awarded to calculations
- A** Accuracy mark, awarded for a correct answer or intermediate step correctly obtained.
- Accuracy marks cannot be given unless the associated method mark is earned (or implied).
- B** Accuracy mark for a correct result or statement independent of method marks.



Bulk Purchases

Bulk purchases are entitled to further discounts.

Please contact **8464–4668** for details.

A token of appreciation

Hard as we tried, no matter how careful the repetitive efforts in seeking out errors in our publications are; some typographical, factual or calculation oversights still elude us. For that, we hope you could accept our sincere apologies here and would greatly appreciate it if you could point them out to us either through email [sales@yellowreef.com].

In our continuous and relentless pursuit of excellence, we would like to extend a very small token of appreciation to you for these selfless feedbacks (per mistake reported and accepted).

- *Critical factual or calculation error found* – £5.00 or HKD60.00 or MYR25.00 or SGD10.00 or equivalent
- *Normal factual or calculation error found* – £2.50 or HKD30.00 or MYR12.50 or SGD5.00 or equivalent
- *Critical problem sum plus solution suggested / accepted* – £5.00
- *Normal problem sum plus solution suggested / accepted* – £2.50
- *Critical diagram error found* – £5.00
- *Normal diagram error found* – £2.50
- *Critical suggestion to improve / accepted* – £5.00
- *Normal suggestion to improve / accepted* – £2.50
- *Typographical or grammatical error found* – £1.00 or HKD12.00 or MYR5.00 or SGD2.00 or equivalent

Please provide, together with your errata and/or suggestion(s), your local bank account number through email or private message, so that we can electronically transfer directly the small token into your bank account.

By this partnership of collective wisdom, we truly hope to provide **accurate education** to users of our excellent publications.

Our management hereby reserves the rights to the compensation aforesaid to all original submissions. Due to the large number of *repetitive* submissions, only successful first submissions are notified and awarded.

We also would like to take this opportunity to thank the numerous well-wishing contributors and wish all of you many happy returns. Without your support, we wouldn't be able to improve so quickly and accurately. Once again, a big thank you.

Note from the Authors

Critical ① / Complete ① Guide

*“A **guide** is a person who leads anyone through **unknown** or **unmapped** country. This includes a guide of the real world (such as someone who conducts travellers and tourists through a place of interest), as well as a person who leads someone to more abstract places (such as to knowledge or wisdom).”*

— Wikipedia

A **textbook** on the other hand is a manual of instruction in any branch of study. *Textbooks* are produced according to the demands of educational institutions (Source: *Wikipedia*).

I have come across many students whose feedbacks were disbelievably similar:

“Since it is compulsory for me to get the textbook, I feel that there is no further need to get the guide. Since the guide is no more than regurgitating what is already mentioned in the textbook, I would rather try to learn by studying the textbook first and then follow by practising some of the readily available exercises provided by the teacher. I believe teacher knows best. When the going gets tough, it is usually due to my large class size. I will then seek private tuition instead.”

Unfortunately, no matter how good the private tutor is, the private tutor is only willing to spend at most 1–2 hours per week per subject to coach the student. This approach clearly is inadequate. If it is, then every single student would have achieved distinction grades with ease. But, that is not the current scenario. **Accurate self–education is therefore of paramount importance.**

Having a **competent guide** is very important in developing a student’s competence in the subject matter. The *guide* professionally collates every single important curriculum in the subject matter and presents it in a logical manner. The aim is to provide **expert guidance** to the student by helping him to acquire his competence as fast as possible; much like the *local trekking guide* that will take the unfamiliar climber personally (no matter how competent is his climbing skill) through the safest and smoothest **uncharted passage** to the mountain top. Nowhere in any of the official trekking notes will there be advice on warning that descending is way more treacherous than ascending. Indeed, a competent mountain guide would always prepare a hand-made “walking stick” for the climber for his descend. This way, the climber would usually be able to minimize most of the permanent injuries associated with reckless descending. Amusingly, contrary to popular belief, ascending is deemed very easy and safe.

To illustrate this important relationship, let’s go through the various aspects of a **competent guide**:

① Question–answering techniques:

No *textbook* is allowed to teach *question–answering techniques* as it is forbidden by the education institution. The education institution is expected to maintain a holistic approach to the curriculum and to education. **Spoon–feeding is clearly not one of them.**

Example

What is the difference between speed and velocity?

Most students (and some junior teachers) would have smiled at the simplicity of the question asked and naively suggested the answer to be:

Speed is a scalar quantity, with only a magnitude defined; while velocity is a vector quantity, with a magnitude and a direction defined.

The students expect no less than a full credit. But, they are all mistaken.

The examiner expects the student to be able to explain the difference particular to this case. Otherwise, the question could easily have been between the quantities of say, speed and magnetic field, or between air and building material (basically any two different things). Clearly the examiner meant that speed and velocity is somehow related



and hence, the examiner intends to assess the student’s ability to discern its particular difference. The expected answer is therefore:

Velocity is a vector quantity, with a magnitude and a direction defined; while speed is only the magnitude of the velocity, hence, a scalar quantity.

Subtle, but different. This answer would have gained full credit.

② **Definitions:**

Example

Define speed?

Some students would have suggested the answer to be:

Speed is defined as the change in the distance travelled per unit time.

Some schools would have given full credit to this answer. But, other top schools would have marked this answer as ‘incorrect’. These top schools expect the students to give the answer as:

Speed is defined as the change in the distance travelled with respect to time.

The top schools reasoned that the former answer is a physical formula and not a statement of physical fact, which implies that the statement could not be applied in other planets or different system of base quantities.

A competent guide would have collated all these relevant examiner’s reports to ensure the correct presentation of **accurate education**, so that the student can confidently score. A *textbook* doesn’t perform this role.

③ **Working knowledge:**

Example

Find the inverse of the function

$$f : x \mapsto \frac{1}{x-1}, \quad x \in \mathbb{R}, \quad x \neq 1.$$

Again, a fair number of local textbooks suggested the following working to the final answer, which many students not being wiser followed:

$$\text{Let } y = f(x) = \frac{1}{x-1},$$

Rearranging and making x as the subject,

$$x-1 = \frac{1}{y} \Rightarrow x = \frac{1}{y} + 1$$

∴ The inverse function is:

$$f : x \mapsto \frac{1}{x} + 1, \quad x \in \mathbb{R}, \quad x \neq 0. \quad (\text{ans})$$

The inverse function cannot “miraculously” appear after the statement, $x = \frac{1}{y} + 1$. It is

just not possible. **Mathematical deduction must be made on firm mathematical ground.** By being able to deduce the final answer is not the end itself, the approach must be sound and persuasive. Therefore, before granting full credit, the examiner must be convinced that the student knows the exact reasoning behind the derived answer.

The competent guide would have suggested this simple and yet exact approach:

Let $y = f^{-1}(x)$, the required inverse function. — ①

Perform a function operation on y:

$$f(y) = f[f^{-1}(x)]$$

A property of function: Any function of variable, x , being operated upon by its own inverse function will yield back the variable, x :

$$\Rightarrow f(y) = x$$

$$\Rightarrow \frac{1}{y-1} = x \Rightarrow \frac{1}{x} = y-1 \Rightarrow \frac{1}{x} + 1 = y = f^{-1}(x)$$

\therefore From ❶, the inverse function is:

$$f: x \mapsto \frac{1}{x} + 1, x \in \mathbb{R}, x \neq 0. \text{ (ans)}$$

❷ Facts:

Example

Posted on <stomp.com.sg> on 10 Nov 2009

MOE approved Physics textbook teaches my nephew the wrong thing.

A STOMPer's nephew came home crying after his GCE 'O' level Physics exam. He answered a question according to what he studied from the MOE approved textbook, only to find out later that it was wrong.



How can the MOE approved textbooks, which so many students use, carry such errors and ambiguities, questions this STOMPer.

Says this STOMPer:

"My nephew who sat for his GCE 'O' level exam came back crying and showed me his Physics Paper 1 (5058/01) in which Q19 says:

- What is the refractive index of a medium?
- A the ratio of the speed of light in air to the speed of light in the medium.
 - B the ratio of the speed of light in the medium to the speed of light in air.
 - C the ratio of the speed of light in the medium to the speed of light in vacuum.
 - D the ratio of the speed of light in vacuum to the speed of light in the medium.

"According to the internet, which I have checked the answer is 'D'.

My nephew who wrote the answer as 'A' later consulted his teacher after the exam and was told that the answer is 'D'.

According to his textbook page 231 the authors say 'It has been proven that the refractive index is a ratio between the speed of light in air or vacuum and the speed of light in a medium'.

The cover of the school textbook titled GCE 'O' Level Physics matters by Charles Chew and Chow Siew Foong and there was a seal with the words 'Approved by Ministry of Education for use from 2007 - 2011'

This was the textbook used in many of our secondary schools and endorsed by the MOE.

If the textbook has errors or ambiguities why does MOE recommend that schools use this particular textbook?"

A competent guide would have explained that the determination of any physical standard, such as the refractive index, must be found based on invariant bench-mark(s). Air being



denser or less dense in different parts of earth would not have been a good candidate. At best, it can only be used as a good proxy or approximation.

“Knowledge is power. Total knowledge, acquired through accurate education, is absolute power.”

version 1.03

Challenging Practice Questions ④ / Solutions ⑤

“Now, here, you see, it takes all the running you can do, to stay in the same place. If you want to get somewhere else, you must run at least twice as fast as that!”

— Lewis Carroll (author, *“Alice Through the Looking-Glass”*)

The *Red Queen* is the one who runs hard but never gets anywhere because everything else in the landscape is also running. She tells Alice, “It takes all the running you can do to keep in place!” *Van Valen* used the *Red Queen* as a metaphor for his evolutionary principle that regardless of how well a species adapts to its current environment, it must keep evolving to keep up with its competitors and enemies who are also evolving. Thus, the **“Red Queen” effect**: do nothing and fall behind, or run hard to stay where you are.

Through the Looking-Glass, authored by **Lewis Carroll** is a sequel of his earlier work, *Alice in Wonderland*. In this, the *Red Queen* tells Alice, “It takes all the running you can do to keep in the same place”. This is some pithy statement, comparable with “*There is no such thing as a free lunch*”. **Leigh Van Valen** was one of the founders of the field of Paleo-biology, which combines research on current life forms with the study of fossils to answer questions about large-scale evolutionary and ecological patterns. He was the famous evolutionary biologist, who coined the **“Red Queen Theory of Evolution”**, *i.e.*, as we improve, our competitors, preys and predators improve too.

Not only resources available to the student are scarce, **time is also scarce**.

The **natural choice** is to get the best guidebooks and procure some of the “hardest” and “trickiest” question books to practise. When the preliminary exams come, the student did extremely well, as most schools tuned their question–types to the hardest and trickiest available. In a way, the student got it easy. He / She is spot–on (or shall we say, he / she has “spotted” the question–types correctly). The school thought that by setting the most difficult question–types, the student is now better prepared for the actual final external exams. How misleading!

When the actual final external exams came, the student noticed that the question–types were a lot easier and demanded very few “acrobatics” but more than 50% of the questions asked were for explanations from the first principles! Something that the school took it for granted for a long time as it is so fundamental. It is sad that during this time, being ill–prepared (or shall we say, wrongly–prepared), some of the most able students (those who scored well in their prelims) stormed out of the exam hall and never return, many have gone mad as a result. For those who managed to complete their writings did very badly and the tutors were puzzled by their poor performance. Good prelim results don’t seem to correlate well with the actual exam grades. For years, tutors were dumb–founded by this unusual display of diversity. The tutors frequently attributed that to “just–in–time” illnesses or sudden mental blocks.

If the student is well–prepared and comfortable about his / her ability, the exam is no more complicated than a common class test or classroom exercise. There should not be any high mental stress induced that will succumb the student to go into extreme mood swings and mental discomfort.

Make no mistake about exam stress, the student must be prepared and aware of the question–types being tested in the actual final exam. It is a true battle fought in the real. No point scoring a distinction for the prelims while securing a fail or less than ideal grade for the actual finals. It is the final exam grade that will follow the student for life.

Therefore, you must practice and converse well in the actual similar question–types in the actual final external exam.

The *challenging practice questions / solutions* set collates all these **actual question–types** and present them in a logical order for your need, a **must–have critical resource for the student**.

With all **‘trick’ questions covered** and **complete coverage of similar question–types since 1996**, one could hardly go wrong.

Give yourself a break, even if you have no *time*, practise this series, you can well be on the way to an **easy final distinction**.

version 1.04

Challenging Drill Questions ④ / Solutions ⑤

“If I have seen yonder, it is by standing on the shoulders of giants.”

— Sir Isaac Newton

If a student is drilled to the hilt on the question–types, would’nt the student be only exams–smart and may not be able to handle life or career at a later stage?

This statement only spells half–truths with reference to the ultimate grading of students.

If a student is able to do nothing else, except to drill well and consequently, score well. Then I am afraid that student will not do well in life. The student would be better off just by learning a basic technical skill and work hard for the rest of his/her remaining life. But, we are dealing with very intelligent beings here, the **homo sapiens** specie. Scientists had all along deduced that our human brains are 40% too big. Even the earth’s most ferocious predator, the lion, king of the jungle, has brain that is in much smaller proportion than that of the human specie. What then contributes to this evolutionary misnomer?

The answer lies in the fact that although we, the humans, are at the top of the food chain and we don’t have much natural enemies, but yet, we are our own worst enemies. It is this constant fear of our *neighbours* that our brains grow bigger and bigger through natural selection (the **evolution theory**). It is natural that humans with bigger neural faculties are better adept to avoid danger from his *neighbours*. This greatly increases their chance of survival and as a result, their number increases.

Recently, scientists also dwell in the all important issue of **nature versus nurture**, a Cambridge scientist concluded that the human brain is much more sophisticated than we think it is. Instead of suggesting that we are born more or less capable than our *neighbours*, he suggested that the human brain is born very versatile, the natural mind is built with adaptors to take advantage of his environment. This explains why a child born of a street cabbie can still ace the exams and do well in life, while a child born of wealthy origin may still fall by the way–side. Or a child with limited education can still build wealth beyond their wildest dreams, at the same time, a child with rich disposition and education, still wondering what to do next (Here I chose wealth as a measure for success, of course, one can choose other measures, but it should not affect the outcome of case study).

Since we can find great examples on both sides of education, does this argument lead to simply the conclusion that we don’t need education?

The answer is obviously no and quite the opposite. The Cambridge scientist concluded that the nurture part of the child is more significant. We thus need education ever more. The question remains how best we should know it.

Education is about learning what our predecessors have discovered. It would be silly if one would deny education and go on his own way to uncover the very same facts that his predecessors have learnt. Education for that reason is the shortest path to success. **By knowing and learning well what is already known, one now has the luxury to spend the rest of his time to uncover new truths and be better** (*i.e.*, a long–winded way of restating **Newton’s quote**).



This *challenging drill questions / solutions* set is meant for direct use by students preparing for the exams. A sky diver repeatedly jumps to achieve precision and agility. A fighter pilot repeatedly flies his aircraft to co-ordinate his attack sequence and mission completion. A general of the army frequently conducts paper and ground exercises to prepare for that possible eventuality that the country might go into war. Yet, through these all, no one laughs at their doggedness but instead, praises their fervours.

When we come to students drilling for exams, the students were laughed off as nerds and geeks, something "uncool". This is not right. It came as no surprise that Mr Bill Gates, Microsoft, the current youngest and richest billionaire, said once that "*the nerds and geeks will rule the world*".

- ❶ Every year, examiners from top schools like to create **new question–types** to test their students. This book collects faithfully these new question–types and presents them in its entirety in a **topical order to facilitate careful rapid drilling** and learning (**with complete answer keys**).
- ❷ No matter how creative the examiners are, there is a physical limit to the number of question–types one can reasonably create, as the question–types are limited by the exam syllabus. This book is a **complete and true encyclopedia of question–types**. There shall be no surprises.
- ❸ Students are normally quite adept to normal question–types, but the exams more often than not involve many "trick" questions. One would notice the more recent exam question–types were involved in advanced "trickery". "Tricks" are only surprising when they are encountered fresh. If the same "trick" reappears, the "magic" would have worn-off and no longer have any effect on the student. **But, these "trick" question–types must first be encountered.**
- ❹ Due to the large number of different question–types and time–constraint, it may not be too reasonable to insist that the student practice every single question presented in the *questions book*, after all these questions tend to be more difficult and hence, more time–consuming. The *solutions book* with **step-by-step solution** to each question, serves as a remedy for this lack.
- ❺ Top schools by far set the most difficult question–types to drill their students. If the student can answer the questions in this *question book*, one can confidently score in every single exams. **The tendency towards carelessness is also greatly reduced.**

version 1.01

"All roads lead to Rome."

— Proverb

The Romans built roads wherever they went. Rome, the empire, spread along the roads. The Romans designed their roads carefully and purposefully so that they all led to Rome, with Rome as the central hub, hence the phrase.

Every publication will profess their way is the one and only true way. That is *not* correct. The truth is that there are many ways to reach the final objective.

This *teacher's reference* is not meant for direct use by students preparing for the exams, but, as a complete resource for teacher / student to sharpen their understanding of the subject matter. **This is an advanced trade book.**

- 1 Every year, the examiner stresses on different objectives to test the student's ability. This book is thus segmented in such a way that the teacher / student will learn the **complete question-types** in its entirety in a chronological order and see for themselves how they have changed through the years.
- 2 The teacher / student will be able to see for themselves that, although the syllabus did not change much over the years, the question-types did evolve to a rather different current form. One would have noted that during the earlier years, the question-types were meant to test the students on their competence on the subject matter. As the years advanced, one would notice the more recent question-types were involved in advanced "trickery". The authors have singled-out these seemingly easy-looking question-types to all. "Tricks" are only surprising when they are encountered fresh. If the same "trick" reappears, the "magic" would have worn-off and no longer have any effect on the student. **But, these "trick" question-types must first be encountered.**
- 3 Unless the question-types involved have only one approach in answering them, the book will provide very carefully **all possible step-by-step solution approaches.**
- 4 Another important feature in this book is that it captured the **various critical feedbacks and examination reports** from a wide range of teachers' authoritative resources to accentuate **common mistakes**, as well as **unusual habits** by students that led to wrong answers. This collection of *common mistakes* proved invaluable to all teachers / students.
- 5 **Short side-reading notes** are included "on-the-fly" to provide a quick look-up for those who need access to important facts and techniques immediately.
- 6 Since many feedbacks from teachers/students are related to great tendency of students to make careless mistakes under stressful exam conditions. The book has incorporated a simple and easy-to-implement **check-back procedure for each and every question-type ever tested in the actual examinations since 1996 onwards**, so that the students can learn how to check-back their work for any carelessness immediately after getting the answer (the teacher too can teach these valuable techniques early in the student's learning curve).
- 7 Before this book reached the current final-form, the authors have conducted a small sample experiment on current students taking the exams. The students were given a small test and their scripts were marked. Common mistakes and unusual wrong habits were highlighted to them. A month later, they came back again for a similar test. Interestingly, they all repeated the same common mistakes and unusual wrong habits. It proved one basic fact – **the students' sense of reality is not always grounded properly.** In fact, students need to go at it for an extended period of time, before they could realize their folly and correct their fundamental misconception.

version 1.03



Levelling the playing field

A **level playing field** is a concept about fairness, not that each player has an equal chance to succeed, but that they all play by the same set of rules.

Not every person is born with a silver spoon in his mouth, *i.e.*, born into a wealthy family. There is, therefore, no such thing as a *level playing field* to begin with. Even so, it is not a peccadillo to be born poor.

Although wealth is not an absolute measure of one's happiness and self-worth, it nevertheless provides one with a sense of well-being.

If one is unskilled, one has no choice but to take on only lowly paying jobs which require little or no job-specific knowledge, such as a street-cleaner or a dish-washer (no pun intended).

In order to improve one's standing in the society, one has to be schooled in both knowledge and skill. In its broad sense, **education** refers to any act or experience that has a formative effect on the mind, character, or physical ability of an individual. It is usually transmitted through schools, colleges and universities.

With *education*, one can choose to be a chef, a dancer, an artiste, a lawyer, an engineer, a doctor, an accountant or even a banker. Even though one might have come from a lowly background, one can still advance comfortably to higher rungs of the society and improve one's life.

Save for, if one still has the passion to be the best street-cleaner or dish-washer in town, why not? Indeed one can truly choose his / her own path.

Hence, *education* is about having one's own choice and definitely one's ultimate field leveller.

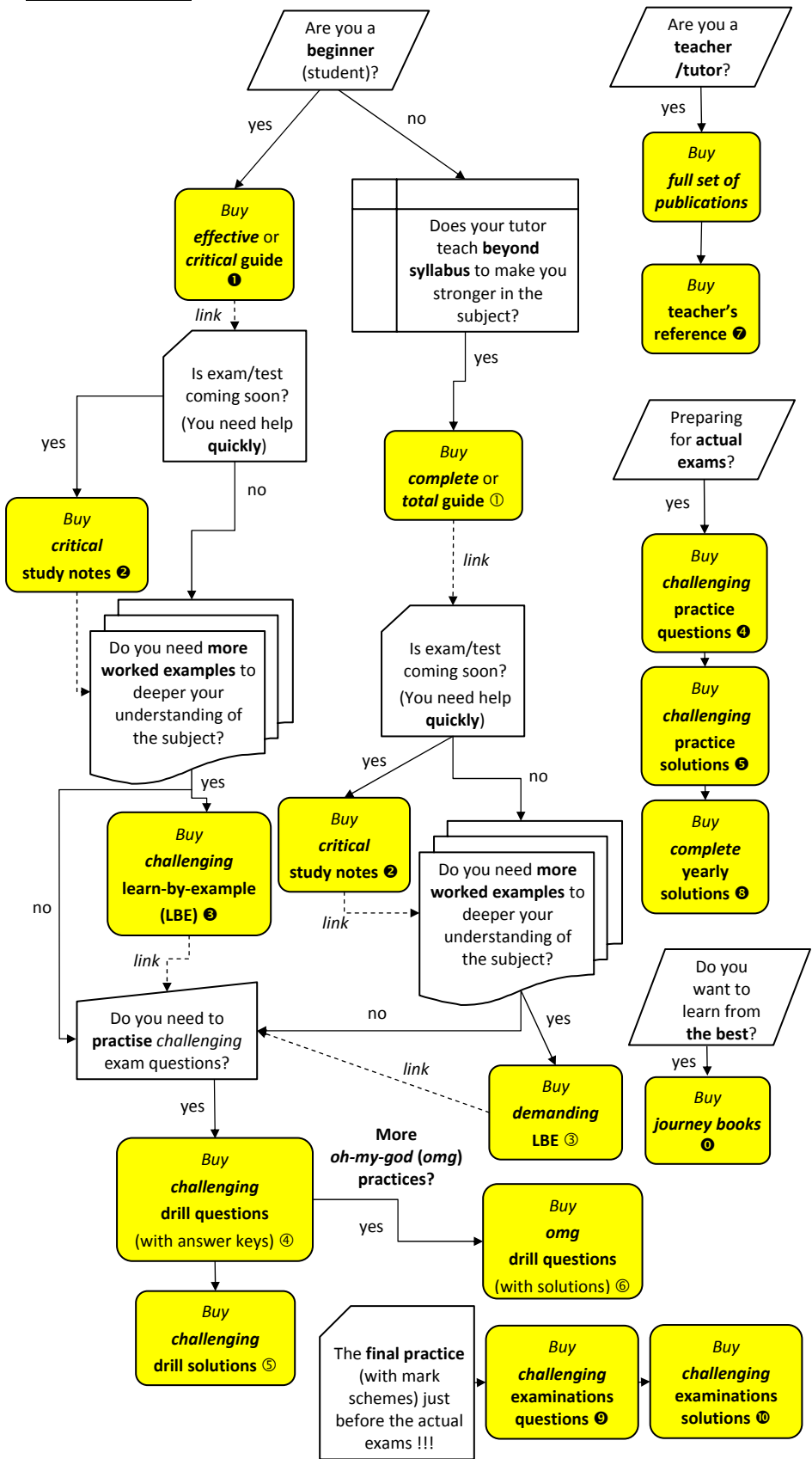
But, the process of education is not cheap.

We are prepared to assist in whatever ways we can to provide this field leveller. Any students that are currently under any *financial assistance schemes* or deem unable to procure any of our publications to improve their grades or if you are a compassionate teacher or concerned parent involved with these students, please do get in touch with us at <sales@yellowreef.com> on the number of **free copies** you need.

For those of you who are not eligible for this help, but still want some form of help, please visit <www.yellowreef.com> and look under the <*books*> or <*solutions*> sections for some free goodies.

Here, may we wish all talents, big and small, be allowed to blossom to their fullest extent.

ROAD MAP



version 2.06

ordinary level
(S1 – S3 or S4)

advanced level
or DSE

critical guide ①	An ample <i>effective</i> guide for students starting out at junior Secondary 1 and ends at Secondary 3 or 4 or 5.	An ample <i>effective</i> guide for students starting out at Secondary 4 or lower Form 6 or JC year 1 and ends at Secondary 6 DSE or upper Form 6 or JC year 2 or 3.
complete guide ①	A total deliberation of extensive concepts taught in <i>top schools</i> .	A total deliberation of extensive concepts taught in <i>top colleges</i> .
critical study notes ②	An intense and sharp delivery of concepts. The structure and organization are direct verbatim imports from <i>top schools</i> .	An intense and sharp delivery of concepts. The structure and organization are direct verbatim imports from <i>top colleges</i> .
challenging learn-by-example (LBE) ③	The MCQs / structured question-types were taken from actual exams. The deliberations were from easy to hard. (topical)	The MCQs / structured question-types were taken from actual exams. The deliberations were from easy to hard. (topical)
demanding LBE ③	The MCQs / structured question-types were taken from actual exams worldwide. The deliberations were from easy to hard. (topical)	The MCQs / structured question-types were taken from actual exams worldwide. The deliberations were from easy to hard. (topical)
challenging practice questions ④ (with answer keys) / solutions ⑤	Actual exam questions arranged in a topical order. Its <i>comprehensive</i> solutions, with mark schemes.	Actual exam questions arranged in a topical order. Its <i>comprehensive</i> solutions, with mark schemes.
challenging drill questions ④ (with answer keys) / solutions ⑤	For practice. The MCQs / structured question-types were taken from actual preliminary exams of <i>top schools</i> . (topical) plus <i>comprehensive</i> solutions.	For practice. The MCQs / structured question-types were taken from actual preliminary exams of <i>top colleges</i> . (topical) plus <i>comprehensive</i> solutions.
oh-my-god drill questions / solutions ⑥	For practice. The MCQs / structured question-types with solutions were taken from actual exams of <i>top schools</i> worldwide. (topical)	For practice. The MCQs / structured question-types with solutions were taken from actual exams of top prep-schools worldwide. (topical)
teacher's reference ⑦	A complete and comprehensive reference for teachers.	A complete and comprehensive reference for teachers.
complete yearly solutions ⑧	The solutions to actual exams arranged in a yearly format. (only solutions, no questions; please purchase your own copy of the questions)	The solutions to actual exams arranged in a yearly format. (only solutions, no questions; please purchase your own copy of the questions)
challenging examinations questions ⑨ (with answer keys) / solutions ⑩	Accurate exam questions arranged in paper order. The answer key was deliberately not provided as it intended to simulate the actual exam condition. plus <i>comprehensive</i> solutions, with mark schemes.	Accurate exam questions arranged in paper order. The answer key was deliberately not provided as it intended to simulate the actual exam condition. plus <i>comprehensive</i> solutions, with mark schemes.
journey books ⑪		For in-depth learning.

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Payment is by direct-bank-in to personal bank account.

As you must learn and know more about us before your interview, you are required to go to any established popular bookstores and ask for the text/assessment department. In that section, look for the labels under the publisher.

Questions will be asked about these books/DVDs or music CDs.

If you are successful, you will serve under an appropriate supervisor.

Lastly you must be a **fun guy** to work with ...

Oktoberfest

is a 16–18 day festival held each year in *Munich, Bavaria, Germany*, running from late September to the first weekend in *October*. It is one of the most famous events in *Germany* and the world's largest fair, with more than 5 million people attending every year. The *Oktoberfest* is an important part of *Bavarian* culture.

Other cities and many businesses across the world also hold *Oktoberfest* celebrations, modelled after the Munich event. We have also chosen the month of *October* as our thank–you and celebration month as we feel that this is the most crucial month for most students, as they march towards the actual exams. A little help from us would therefore be a great enabler to them.

Hence, each year for the entire month of **October**, we are giving a discount of

30%

off every of our paper editions.

version 1.02



Fruition of the teacher's reference

知彼知己，百戰不殆；不知彼而知己，一勝一負；
不知彼，不知己，每戰必殆。

Producing a reference for teachers is never easy, it took the better of 10 years to fruit. Originally we wanted the book to give an in-depth treatment to the subject matter. We wanted the teachers to be well-equipped. But, wouldn't that duplicate the efforts of varsity books? We stopped. Then we considered giving harder and more creative examples. Again we stopped. It was no difference to our other established books.

Meantime, we were bombarded with queries from students and teachers alike. Many users have followed the recommendations in our books and repeated some of the answers. But, more often than not, the schools marked them wrong as their "answers" don't usually conform to what they were taught. For example, although some of our best guides were accepted by top schools, there are still some other top schools, due to pride or reasons only known to themselves, will still mark these answers wrong as they didn't conform to their own style. Some top school A may accept definition as in "per unit time" but some other top school B may not accept it and only accept "with respect to time". B may insist that "per unit time" points to a mathematical equation and not a statement of fact, while "with respect to time" is a proper statement of fact. All these minute but important juggling will kill the zeal of our best students. What is then the correct and accurate answer?

Consequently, in order to score perfectly, we must find a way to find out what the examiners see as the correct and accurate answer. Indeed, there are currently no reference as to what the examiners want, *i.e.*, from the other side of the boundary marker. Never mind what the local teachers say, we need books viewed from the examiners' point of view: whether Cambridge or any renowned exam boards will take a certain class of answers and not take certain other class of answers. With these clear goggles, the eye-sight of the student is made perfect. The student can now confidently write his exams and assertively claim that it is correct and accurately presented.

Thus, the *teacher's reference* intends to perform this role. Each book (per subject matter), not only equipped with the mark scheme of the subject matter, will also collate at least 100 sets of examiner reports in a topical format for the teacher. The aim is to present a consistent view from the examiners' goggles as to the correct and accurate answers and way of presentation. If "with respect to time" is indeed the only correct way of presenting a statement of fact, so be it. *Let the students and teachers alike note this important differentiation.*

Teacher's reference is therefore an **advanced trade book**.

v1.03

Conversation with a foreign parent

Some time back, I chanced upon a customer at a very prominent bookstore. She literally bought every single conceivable assessment book within a certain level (our books). Out of curiosity, I asked her why does she buy every single copy from one publisher and not spread her risk by buying a range of books from various publishers. Further, those publications that she chose were more expensive compared to similar publications from other publishers.

She explained that she was from a foreign land and her child is currently studying in a local school. It has not been easy for her as a foreigner to pay for the expensive monthly school fees and yet at the same time, still have enough to engage private tutors. She was left with no choice but to provide as much assessment books for the child to do self-improvement. To avoid confusion from incompatible and duplicated learning, she focused only on one single comprehensive renowned supplier.

She felt that investing in these books is only but a one-time payment, if these publications would then help the child to secure a future that will last a lifetime, why not? By saving in other areas of expenditure, a little pain and sacrifice now would have well worth it.

As for gauging the quality of books from various publishers, she opined that she is not in a position to judge, she can only hope that the pricier books would give an accurate collateral proxy to better quality.

Such is the dilemma of many concerned parents. v1.02

Conversation with a local parent

The supervisor of a large bookstore approached me one day during one of my store visits asking whether I could answer an urgent query from a potential customer of our publications.

Her question was why is it that our assessment books are at least 2 to 10 times more expensive than our nearest competitor?

This is not the first time I received such feedbacks. I have always wanted to answer this interesting question in earnest.

To clarify, I told her unlike recommended school textbooks, she does have a choice in whether to buy our books or choose books from other publishers.

Our books have gone through very stringent planning and checks by very qualified professionals. Thus, our costs of production were extremely high compared to other publishers. As such, we were left with little choice but to price these books right. Even so, we still need to contend with the general affordability of the public. Overall, the price quoted is still at the lower end of the *price-performance* spectrum. Nevertheless, it is still the choice of the purchaser whether to buy or not to buy. There was never a compulsion.

She added that she has evaluated the various assessment books and keenly concluded our publications remain the best yet. She asked for that reason if we could sell them to her at a lower rate, as the cost of these purchases might prove a great financial burden to her.

I explained that quality education is never cheap. As a responsible corporate member of the civil society, we do provide on compassionate grounds free copies to students who might be left behind (by levelling their playing field).

She replied she wouldn't need such assistance at the moment.

As a suggestion to break the impasse, I held that she should just gather all the books she need and go straight to the cashier to pay. After the payment, I shall just refund her every cent to the dollar her purchases (I would like to term this an "investment").

She will then asked her student to use them and study for the coming exams. When the exam results are finally announced, she would feedback to me the results. For every distinction the student achieves, she will pay the publisher every year henceforth the total cost of the books bought.

She said this is totally unfair. The multiples would be too high.

I highlighted that this is precisely the issue. We have absolute faith in our books and confident about our "investment". But yet, we can only charge the fees once. Bar the good grades achieved are going to stay for a lifetime with the student. Given a choice, we would rather don't charge upfront the price of the book, but to bill only on success. That way we could easily and accurately be remunerated.

She summed up that she has a better understanding of the issues involved. She proceeded to procure what's necessary as she felt the value of these assessment books way surpasses the price quoted on the covers.

I smiled. *She has answered her own question.* v1.02

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