

# English-GP Notes

Grass

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# Composition

## 1.1 Good Vocabulary

### 1.1.1 'Advanced' Words

1. Crème de la crème / Cream of the crop — The best  
She was hoping to attract the crème de la crème of the art world to her exhibition.
2. Blasé — Bored / Gotten used to / unimpressed / indifferent  
He flies first class so often, he's become blasé about it.
3. Tour de force — A feat or display of strength, skill, or ingenuity  
His novel is a tour de force.
4. Prima facie — Based on the first impression; accepted as correct until proved otherwise.
  - There is prima facie evidence that he was involved in the fraud.
  - For millions of Americans witnessing the event, it was a prima facie case of police brutality.
  - The original lessee (person who lease/rent property) prima facie remains liable for the payment of the rent
5. Sine qua non — A necessary condition without which something is not possible.
  - An interest in children is a sine qua non of teaching.
  - Grammar and usage are the sine qua non of language teaching and learning
6. C'est la vie — used to say that situations of that type happen in life, and you cannot do anything about them.
  - I can't go to the game on Saturday - I've got to work. Oh well, c'est la vie.
7. Sanctity — The quality of being very important and deserving respect  
The sanctity of human life, marriage, etc.
8. Delineate —
  - (a) Describe or portray (something) precisely.  
The main characters are clearly delineated in the first chapter.
  - (b) Indicate the exact position of (a border or boundary).  
The boundary of the car park is delineated by a low brick wall.
9. Picturesque — (especially of a place) attractive in appearance, particularly so in (but not limited to) an old-fashioned way
  - The picturesque narrow streets of the old city
  - The salad has no regional or picturesque name
10. Nascent — (especially of a process or organization) just coming into existence and beginning to display signs of future potential.  
The nascent space industry
11. Subversive — Trying to destroy or damage something, especially an established political system.
  - subversive elements/groups in society
  - subversive ideas/influences
12. Concerted — Jointly arranged or carried out; Coordinated.  
a concerted attempt to preserve religious unity

13. Ascribe — To believe or say that something is caused by something else.
- To what do you ascribe your phenomenal success?
  - A quotation ascribed to Thomas Cooper
14. Scholastic — of or concerning schools and education.  
Scholastic achievements.
15. Scaremonger / Fearmonger
16. Luxe — Luxurious  
the luxe 65-room Four Seasons hotel
17. Equivocal — Open to more than one interpretation; ambiguous.
- the equivocal nature of her remarks
  - the results of the investigation were equivocal
18. Unequivocal — Unparalleled; leaving no doubt; unambiguous.
19. Elucidate — Show
20. Sundry —
- (a) (Adjective) Several different; various; an **assortment** of:
- Prawn and garlic vol-au-vents and sundry other delicacies
  - Sundry distant relatives, most of whom I hardly recognized, turned up for my brother's wedding.
- (b) (Noun) Various items not important enough to be mentioned individually.  
A drugstore selling magazines, newspapers, and sundries
21. Parcel — A collection of things, bought and sold together (for finances), or representing an area of land that is made up of smaller parts (in property).
- ... it means to parcel and measure responsibilities "equally".
  - The parcel of shares is worth between €2,000 and €3,000.
  - A 100-acre parcel in Texas was one of five sites selected for development.
22. Momentous — Of great importance / significance
23. Multifarious — Of many different types
- The newspaper report detailed the fraudster's multifarious business activities.
24. Onus — the responsibility or duty to do something  
We are trying to shift the onus for passenger safety onto the government.
25. Pertinent — Relating directly to the subject being considered.  
Chapter One is pertinent to the post-war period.
26. Apposite — Appropriate; Suitable and right for the occasion  
The film starts in a graveyard, an apposite image for the decaying society which is the theme of the film.
27. Profuse — Produced or given in large amounts
- The company accepted blame and sent us profuse apologies.
  - The book is profusely illustrated with period photos.
28. Cogent — (of an argument or case) clear, logical, and convincing. They put forward cogent arguments for British membership
29. Commensurate — Corresponding in size or degree; in proportion.

- A salary that is commensurate with skills and experience.
  - Bear commensurate weight.
30. Manifold — Nuanced
31. Antithesis / Antithetical — Exactly the opposite of someone or something or of each other
- Birth and death are antithetical.
  - The idea that science is antithetical **to** the arts is wrong.
32. Commodification — The action or process of treating something as a mere commodity  
The commodification of knowledge
33. Kitsch / Kitschy —
- (a) (Noun) Art, decorative objects, or design considered by many people to be ugly, without style, or false but enjoyed by other people in an ironic or knowing way
- His home's full of 1950s kitsch.
  - The room was decorated in a cheerfully kitschy style.
- (b) Considered to be in poor taste but appreciated in an ironic or knowing way.  
The front room is stuffed with kitsch knick-knacks <sup>1</sup>, little glass and gilt ornaments
34. Pragmatic / Hard-nosed — being *realistic/practical/sensible way*, rather than obeying fixed theories, ideas, or rules.  
In business, the pragmatic approach to problems is often more successful than an idealistic one.
35. Tawdry / Meretricious / Gimcrack — Showy / Attractive on the surface but cheap or badly made.
- Plastic gimcrack cookware
  - He claims that a lot of journalism is meretricious and superficial.
36. Nondescript — Very ordinary, or having no interesting or exciting features or qualities.
37. Austere — Very simple, with only the things that are absolutely necessary, especially because of severe limits on money or goods.  
An austere childhood during the war
38. Posey — Expensive and fashionable, in a way that is intended to make other people feel admiration.  
I resent paying extra for my drink just because it's in a posey bottle!
39. Glib — (of words or a speaker) fluent but insincere and shallow.
40. Myopic — Short-sighted  
Their myopic refusal to act now will undoubtedly cause problems in the future.  
(Can also be used literally: Myopic children  $\iff$  Short-sighted children )
41. Tokenistic — Symbolic effort not meant to bring about long-lasting, significant, or effective change.
- The advertising industry has moved on from the times when ethnic minorities were only used in a patronising, tokenist way.
  - He is keen to attract ethnic minority listeners by broadening content rather than by making tokenistic appointments.
42. Insidious — Proceeding in a gradual, subtle way, but with very harmful effects.  
High blood pressure is an insidious condition which has few symptoms.
43. Purport —

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<sup>1</sup>small worthless objects, especially household ornaments



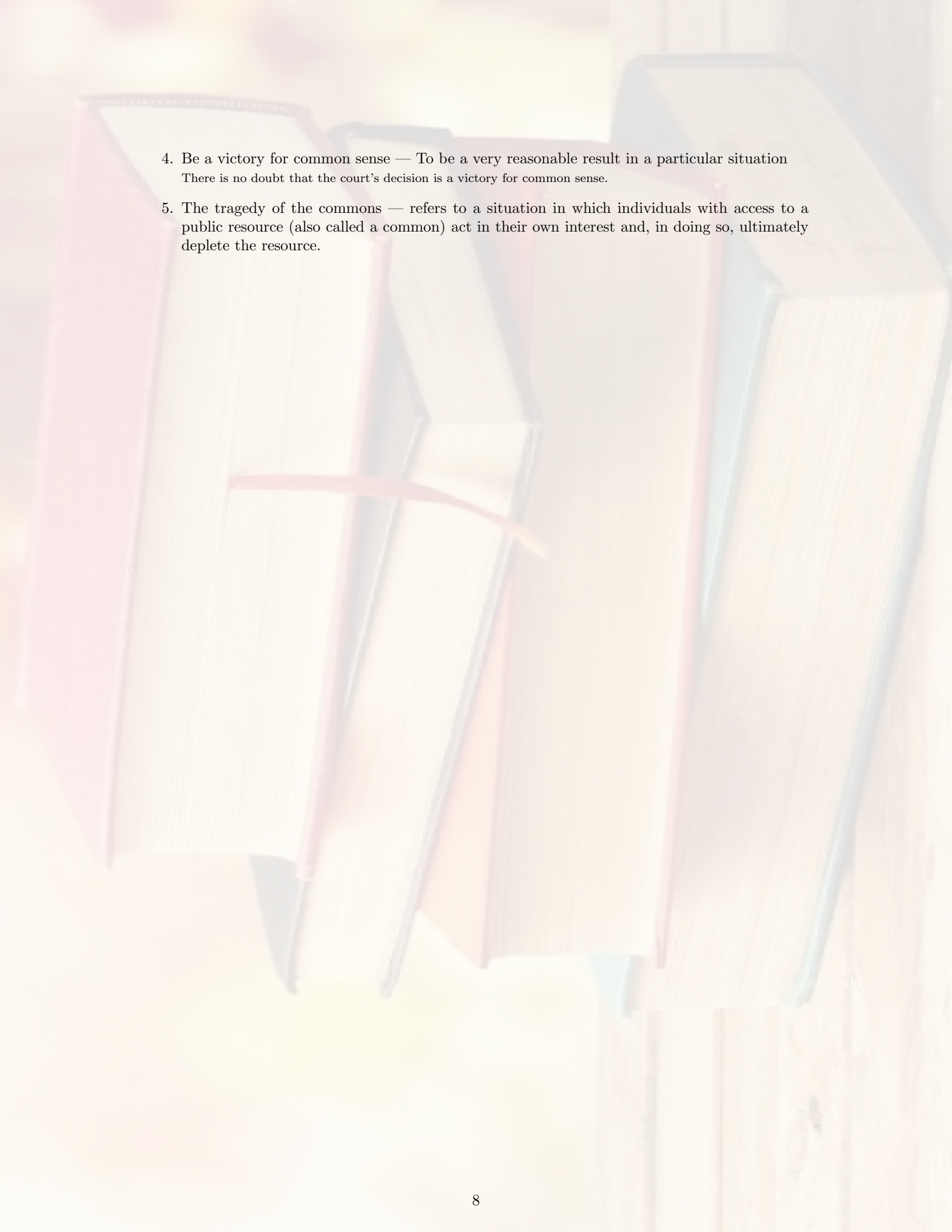
- (a) (Verb) Allegedly; appear to be or do something, especially falsely.  
She is not the person she purports to be
- (b) (Noun) The general meaning of someone's words or actions.  
I didn't read it all but I think the purport of the letter was that he will not be returning for at least a year.
- (c) (Verb) To claim something is true, but without proof.  
The story purports to explain the origin of the game of chess.
44. Innocuously — In a way that is completely harmless (= causing no harm).
45. Connoisseurs — Expert judges in matters of taste
46. Avid — Having or showing a keen interest  
Tourists today are the more avid audience for cultural handicrafts than the locals themselves.
47. Back-breaking (labour or work)
48. Strenuous — Requiring or using great effort or exertion.  
Strenuous labour / work
49. Industrious — Diligent and hard-working.  
An industrious people striving to make their country prosperous.
50. Sedulous / Assiduous — Showing hard work, care, and attention to detail.
- An assiduous student
  - The government has been assiduous in the fight against inflation.
51. Imperative — importance  
There is far less imperative for Singaporeans today to toil as their predecessors did.
52. Toil — Work extremely hard or incessantly
53. Unflagging — Tireless, persistent  
Unflagging work ethic
54. Remunerative — Financially rewarding / lucrative. Providing payment for work.
- A highly remunerative (= well paid) job
  - Since June 2003 he has not had any remunerative employment (No paid employment)
55. Ethos — The characteristic spirit / beliefs / ideas of a culture, era, or community as manifested in its attitudes and aspirations.  
Its ethos was one of careful reflection and of enjoying ideas and communicating them.
56. Ethic — A system of accepted beliefs that control behaviour, especially such a system based on morals.  
Strong work ethic
57. Percolate — (of a liquid or gas) filter gradually through a porous surface or substance.  
This ethos has percolated into every aspect of our lives and instilled in us a strong work ethic.
58. [Looked] Askance — To look at or think about someone or something with *doubt, disapproval, or no trust*.  
They looked askance at our scruffy clothes.
59. Stint —
- (a) (Noun) A fixed or limited period of time spent doing a particular job or activity.  
He has just finished a stint of compulsory military service.

- (b) (Verb) To provide, take or use *only a small amount* of something  
Don't stint yourself - take another slice of cake.
60. Sagely / Sagaciously — In a way that has or shows understanding and the ability to make good judgments  
The author has sagaciously not revealed his name.
61. Flippant — Not showing serious or respectful attitude  
It's easy to be flippant, but we have a serious problem to deal with here.
62. Precocious — (especially of children) showing mental development or achievement much earlier than usual.
- A precocious child, she went to university at the age of 15.
  - She recorded her first CD at the precocious age of twelve.
63. Sophomoric — Silly and behaving like a child.  
A sophomoric sense of humour.
64. Petulant / Fraction — Easily annoyed and complaining in a rude way like a child
65. Infantile — Childish (behavior)
66. Emancipate — To give people social or political freedom and rights
67. Root and branch — Completely
- Racism must be eliminated, root and branch.
68. Underwrites — If an organization underwrites an activity, it gives it financial support and takes responsibility for paying any costs if it fails.
69. Not in Kansas anymore — stepped outside of what is considered normal, we have entered a place or circumstance that is unfamiliar and uncomfortable, we have found ourselves in a strange situation.
70. Chicanery — Deception by artful subterfuge or sophistry (trickery)  
He wasn't above using chicanery to win votes.
71. Subterfuge — A trick or a dishonest way of achieving something  
It was clear that they must have obtained the information by subterfuge.
72. Artifice — Stresses creative skill or intelligence, but it also implies a sense of falseness and trickery
- ...believing that characters had to be created from within rather than with artifice.
  - ...revising the state's constitution through a series of legal stratagems and artifices. ...
  - Amazingly for Hollywood, she seems almost entirely without artifice.
73. Unflappable — Marked by assurance and self-control  
The unflappable teacher never even blinked when the wall map came crashing down.
74. Incisive — Impressively direct and decisive (as in manner or presentation)
- an incisive analysis
  - an incisive unsentimental writer
75. Acclimate/Acclimatize — To adapt (someone) to a new temperature, altitude, climate, environment, or situation  
They had to acclimate themselves to an urban lifestyle.
76. Affable — Friendly and easy to talk to  
She was quite affable at the meeting.

77. Pragmatic — relating to matters of fact or practical affairs often to the exclusion of intellectual or artistic matters : *practical* as opposed to idealistic
78. Conglomerate — A company that owns several smaller businesses whose products or services are usually very different. OR made up of parts from various sources or of various kinds. (e.g. a conglomerate empire)
79. Savant — a person with a high level of knowledge or skill, especially someone who is less able in other ways.
80. Ostensibly — in a way that appears or claims to be one thing when it is really something else / shows a discrepancy between a declared or implied aim or reason and the true one
  - (a) He has spent the past three months in Florida, ostensibly for medical treatment, but in actual fact to avoid prosecution.
  - (b) The e-mail requested account information, ostensibly to help clear up a "billing error".
81. Lofty ambition/mountains/etc
82. Incredulous/Incredulity — unwilling to admit or accept what is offered as true (skeptical)
83. Credulous — ready to believe especially on slight or uncertain evidence  
accused of swindling credulous investors
84. Debacle — a great disaster / a complete failure.
85. Ignominious — (especially of events or behaviour) embarrassing because of being a complete failure.
86. Fiasco — A complete failure.
87. Ad infinitum — without end or limit
  - (a) Depending on the initial placement of the constituent cells, their clusters can showcase surprisingly complex behaviors such as self-replication *ad infinitum*.
  - (b) The story has been analyzed and argued over *ad infinitum*, especially in the midst of the 30th anniversary. Naturally, some object to the notion of artificially extending life *ad infinitum*, wherein the story begins to get complicated.
88. Priori — relating to or derived by reasoning from self-evident proposition/presupposed by experience.
  - A priori assumption is one that is presumed to be true without any assessment of the facts or without further proof.
  - A priori usually describes lines of reasoning or arguments that proceed from the general to the particular, or from causes to effects.
89. Fecundity — The fact of producing or creating a lot of new things, ideas, etc.
  - (a) The play is yet another representation of his creative fecundity.
  - (b) The work combines a fecundity of imagination and a richness of poetical expression.

## 1.2 Idioms

1. Talk the talk ... walk the walk — They do not act in a way that agrees with the things they say When it comes to recycling he talks the talk but he doesn't walk the walk.
2. Bring home the bacon — To earn money for a family to live on I can't sit around all day - someone's got to bring home the bacon.
3. An old/a wise head on young shoulders — a child or young person who thinks and talks like an older person who has more experience of life.

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4. Be a victory for common sense — To be a very reasonable result in a particular situation  
There is no doubt that the court's decision is a victory for common sense.
5. The tragedy of the commons — refers to a situation in which individuals with access to a public resource (also called a common) act in their own interest and, in doing so, ultimately deplete the resource.



### 1.2.1 Words/Phrases to not forget

1. Looming
2. Don wear
3. Leveraging
4. Precondition — Prerequisite
5. Exorbitant
6. Concede — Admit/Agree after Denial /Resistance
7. Sobering (e.g.: The facts are sobering)
8. Underpin — Support, justify, or form the basis for.
9. Plethora
10. Purists
11. Paradoxically
12. Global culture of Interdependency
13. Age of global crime and terror flows
14. Spurt (e.g.: of growth from  $x$  to  $y$  )
15. Unfathomable
16. Bolster
17. Sufficient
18. Mainstream

### 1.2.2 List Of Synonyms / Words with Similiar Purpose

1. (a) So  
(b) Thus  
(c) Therefore  
(d) Hence  
(e) Thence  
(f) In this way  
(g) Consequently  
(h) Accordingly  
(i) As a result
2. (a) Significant  
(b) Considerable  
(c) Momentous  
(d) Important
3. (a) In addition  
(b) Additionally  
(c) Supplementary  
(d) Furthermore  
(e) Moreover  
(f) Not to Mention  
(g) Besides  
(h) By the same token — In the same way or for the same reason.  
(i) In contrast to / Contrary to (e.g.: popular belief)
4. (a) Numerous  
(b) Multitude  
(c) Innumerable  
(d) Countless  
(e) A lot  
(f) Many  
(g) Copious
5. (a) Delineated  
(b) Picturesque  
(c) Exquisite
6. (a) Important  
(b) Essential  
(c) necessary  
(d) Sine qua non
7. (a) An assortment of

## 1.3 Colorful & Picturesque Delineations

### 1.3.1 Word Play

You can try to change the words or phrases used a little, to convey what you mean — but in a way that showcases a greater depth of English writing skills and techniques:

1. "mere"-chandise — is a play on the word 'merchandise'

### 1.3.2 Simile & Metaphors

Try to incorporate some S&M into your essay to make it a more interesting read.

1. Steel engines  $\Rightarrow$  Machines

### 1.3.3 Adding 'Quality' Descriptive Adjectives

1. *Tropical backwater economy* [of Singapore (before it's spurt of growth)]
2. *Iconic* sporting idols
3. *Gruelling* artistry
4. *Incomparable* beauty
5. [Japanese Sushi Masters who] *honed* their craft for a lifetime *effortlessly* draw in customers
6. *Tailored* to their needs
7. *Tirelessly Churned out* by machinery
8. *Profoundly* transformed their appreciation for the *pinnacle* of craftsmanship
9. *Spirit* of handicraft
10. *Sobering* facts
11. ~~wear~~ *Don* new clothing
12. *Tangibly and pragmatically* enhanced the living conditions
13. *Wave* of machine-produced *mass-manufactured goods flooding* the market
14. *Prize value* functionality and affordability over aesthetics and quality.
15. *Tedious* handcrafting
16. *Arthritic* knees and *Misshapen* fingers of our forefathers / pioneers *tell the stories* of their *toil* [in building up modern Singapore]
17. *Unflagging* work *ethic*
18. *Fresh, innovative* solutions
19. *Wealth of* knowledge / diverse experiences
- 20.

## 1.4 Examples

### 1.4.1 Environment

#### 1. Air Pollution

##### (a) WHO

- Associated with 6.7 million premature deaths every year, which is 70% as that of all cancers combined.  
Other organizations estimate the death toll to be even higher
- 99% of the world's population is breathing unsafe air.
- In 2016, 58% of outdoor air pollution related premature deaths were caused by fine particulate matter resulting in stroke or heart disease

##### (b) Our World in Data

- Fortunately, indoor air pollution <sup>2</sup> declined rapidly from 100 000 deaths per year in 1990 to 30 000 per annum in 2019
- Unfortunately, in the same period, the death rate from outdoor air pollution has largely remained the same.

##### (c) (Article from) Nature Communications

- Even in low concentrations, small particulate pollution has been shown to
  - Take years off people's lives
  - Huge negative impact on QOL while living (e.g.: Lung cancer and diseases)
  - Described as "the world's leading environmental health risk factor"

##### (d) Results from course and fine particulate matter in the air we breathe:

- Course particulate matter — Largely formed from natural processes: Dust from deserts, and seafoam. Though also caused by some man-made processes: Dust kicked up from roads  
  
Can get deep inside your lungs and cause problems
- Fine particulate matter (Even more deadlier, the real killer) — Mostly from burning of fossil fuels to boost the economy (E.g. Coal)

##### (e) Burning of fossil fuels

- (Article published on Nature) Responsible for between 30-40% of the direct disease burden of outdoor air pollution
- Estimated 3.6 million deaths a year can be prevented by the direct and indirect phaseout of fossil fuels

##### (f) Ironically helping us fight climate change

- Reflect sunlight away, (more specifically, infrared thermal radiation) which would otherwise reach the Earth
- IPCC estimates reflective sulfates cool the planet by around 0.8°C

#### 2. Renewable Energy

##### (a) Solar Panels: (Our World In Data)

- 10 years ago: much cheaper to build a new power plant that burns fossil fuels than to build a new solar photovoltaic (PV) or wind plant.  
Wind was 22%, and solar 223% more expensive than coal.
- Decreased drastically from \$106.09/W in 1976 to \$0.38/W in 2019
- Dropped by a whopping 80% from 2009 to 2019

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<sup>2</sup>Like from burning coal and wood for warmth

- Now, renewables are actually cheaper than fossil fuels per unit energy
- (b) Energy Storage
- Price of batteries declined by 97% in the last three decades.
  - Prices of lithium-ion batteries (the most pervasive type of batteries) declined by a factor of 40, while capacity increased by a factor of 50 000.
- Prices declined at an average of 18.9% for every doubling in cumulative capacity

### 3. Nuclear Energy

- (a) NE saved 1.8 mil lives from air pollution related deaths (NASA, Kharecha & Hansen 2013 )
- (b) Extremely low death toll
- 31 people died, with no increased cancer rates generally in any considerable scale, in the Chernobyl accident (OECD Nuclear Energy Agency)
    - Poor and unsafe RBMK reactor design
    - Improper, unstable operation of the reactor
  - 0 people died directly as a result of a Fukushima accident, but 573 died during evacuation (United States Nuclear Regulatory Commission)
  - Our World in Data: NE has the lowest greenhouse gas emission, beating even wind and solar.
- (c) Nuclear Waste Disposal is done Responsibly (U.S. Nuclear Regulatory Commission)
- Stored in spent fuel pools and dry casks.
  - Both provide good protection for safety of the public and the environment  $\Rightarrow$  Can even survive unharmed from a head on impact from a train collision
  - Transportation of N.W. in the U.S.  $\Rightarrow$  No waste released / harm caused to ppl or environment in past 40 yrs
- (d) Other forms of energy can be surprisingly cause a higher death toll
- Dam accidents:
    - Malpasset Dam collapse killed 423
    - Vaiont / Vajont dam killed 2000
    - Vale dam killed 270
  - According to Harvard University, nuclear energy has the least impact on human life amongst coal, natural gas, wind, and nuclear energy
- (e) Actual Problems with Nuclear Energy Use:
- Lack of public awareness on actual safety of nuclear energy
  - Expensive and Multi-billion dollar cost  $\Rightarrow$  Not suitable for all countries
  - Risks of nuclear weapons construction through nuclear energy generation  
E.g.: Iran tried on a number of occasions to create nuclear weapons hidden behind the veil of nuclear energy. Used this as a bargaining chip.
- (f) Biofuels
- Advantages (Theoretically)
    - Produced from renewable food sources
    - Fossil fuels are non-renewable while CO<sub>2</sub> emitted is reabsorbed by the plants  $\Rightarrow$  Renewable and sustainable
  - Disadvantages
    - Highly Energy Intensive Production Process

In the U.S. (World's largest producer of bioethanol), biofuels took up 28.9 times more energy than the whole of Singapore in 2020



- Takes up a ginormous land area (Unsustainable Land Use)
  - Provides 2.25% of total energy generation
  - But uses a stupendous 18.5% of land in the U.S.
  - Land has a wide assortment of essential uses
    - E.g.: Direct human consumption, animal food
  - Impact: Significantly increased food prices
    - NCEE Study – 4.5 bil litre increase in bioeth causes a 2-3% increase in food price
  - Impact: Encourage destruction of natural habitats
    - 4050 km<sup>2</sup> of croplands expanded per year.
- Financially unsustainable
  - Bioethanol with corn grain requires 29% more fossil fuel energy input than energy content of bioethanol produced, i.e. net negative in energy.
  - Energy Policy Act of 2005 and Energy Independenc and Security Act are necessary financial incentives for biofuel production to be viable
- Unsustainable Water Usage
  - Biofules use 70-400x more water than other primary energy sources (excluding hydro)
  - increased competition for water

#### 4. Climate Change

##### (a) NOAA (National Oceanic and Atmospheric Administration)

- June 2022 was Earth's 6th-warmest on record
- Antarctic sea ice shrank to a record low for the month in June 2022
- Polar ice coverage hit near-record low globally; June 2022 saw the second-lowest June sea ice coverage (extent) on record. Only June 2019 had a smaller sea ice extent.

##### (b) N.A.S.A. (National Aeronautics and Space Administration)

- While Earth's climate has changed throughout its history, the current warming is happening at a rate not seen in the past 10,000 years.
- Current warming is occurring roughly 10 times faster than the average rate of warming after an ice age. Carbon dioxide from human activities is increasing about 250 times faster than it did from natural sources after the last Ice Age.
- The planet's average surface temperature has risen about 1.1°C since the late 19th century
- Most of the warming occurred in the past 40 years, with the seven most recent years being the warmest.
- Ocean absorbed 90% of excess thermal energy ⇒ Thermal Expansion of sea water
- Shrinking Ice Sheets — Data from NASA's Gravity Recovery and Climate Experiment show Greenland lost an average of 279 billion tons of ice per year between 1993 and 2019, while Antarctica lost about 148 billion tons of ice per year
- Retreating Glaciers — Almost everywhere around the world — including in the Alps, Himalayas, et cetera
- Snow Cover Is Decreasing — Satellite observations reveal that the amount of spring snow cover in the Northern Hemisphere has decreased over the past five decades and the snow is melting earlier.

- Global sea level rose about 20 centimeters in the last century. The rate in the last two decades, however, is nearly double that of the last century and accelerating slightly every year.

Threatens Singapore, with our status as a low-lying island nation

- Extreme Events Are Increasing in Frequency — The number of record high temperature events in the United States has been increasing, while the number of record low temperature events has been decreasing, since 1950.

E.g.: The state of Texas suffered a major power crisis as a result of three severe winter storms

(c) IPCC

- Scientific evidence for warming of the climate system is unequivocal. - Intergovernmental Panel on Climate Change

(d) BBC

- The U.K. reached a new record temperature of over 40 degrees celsius in July 2022
- On the same day, hundreds of firefighters have been tackling fires throughout the U.K. And the London Fire Brigade declared a major incident
- E.g.: Fire swept through east London in the village of Wellington, destroying many homes (possibly started from a compost heap)

## 5. Increasing Ocean Acidification

- Since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30%.
- Since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30%.
- The ocean has absorbed between 20% and 30% of total anthropogenic carbon dioxide emissions in recent decades (7.2 to 10.8 billion metric tons per year).

## 1.5 GP/2023+ Addons

### 1. Global

- In 2022, the Canadian government published the Single-use Plastics Prohibition Regulations (SUPPR). Which banned the manufacture, import, and use of many common single-use plastic products  
(Checkout bags, cutlery, foodservice ware, stir sticks, straws, ring carriers).
- According to the UNEP<sup>3</sup>,
  - Only a *45% emissions reduction* will limit global warming to *1.5C*, almost impossible. 30% to keep to increase to 2.0C by 2030.
  - Even in the best case scenario which is not considered credible, there is expected to be 1.8C increase by 2050.
  - Implementation of *all* current conditional and unconditional pledges only reduces this to 2.4C and 2.6C by the end of this century.
  - Policies *currently* in place point to a *2.8C* increase by the end of the century.
- Criticism about official environmental agencies.
  - IPCC. In the IPCC's third report in 2022, role of the fossil fuel industry is highlighted throughout the report's nearly 3,000 pages, but mysteriously absent from the "Summary for Policymakers" — traditionally the first part of the report that's released and often attracts the most media attention.

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<sup>3</sup>United Nations Environment Programme

- Big Oil's PR war to delay action on climate change:
  - *Quote*: "Victory will be achieved when average citizens "understand" (recognize) uncertainties in climate science." — American Petroleum Institute
  - "information laundering": projecting the company's desired message through ostensibly independent nonprofit organizations.
  - ExxonMobil underwrites well-established groups such as the American Enterprise Institute (It's often the single largest corporate donor to many of these nonprofit organizations, frequently accounting for more than 10 percent of their annual budgets. Most of these organizations also include these same individuals as board members or scientific advisers.)
  - Behind closed doors and in academic circles, Exxon has known that its products would likely cause dangerous global warming since at least the 1970s. The oil industry as a whole has been on notice even longer — since the 1950s.
  - Uncomfortable realization is how subtle and systematic and increasingly sophisticated their propaganda has become — had to rely on statistical techniques from computational linguistics to uncover patterns of speech hiding in plain sight.
- Economy
  - "Green transition is not a cost, but a substantial *opportunity*." — Oxford Economics
  - The transition to a net zero emissions environment by 2050 will create new industries worth \$10.3 trillion to the global economy by that same year.  
E.g. This includes the direct contribution to GDP of electric vehicles manufacturing, renewable power generation, clean energy equipment manufacturing, renewable fuels and green finance; plus the activity supported across global supply chains.
- Local
- Outline: We started long ago in pursuing environmental sustainability, and have achieved success in our old goals (Plant-A-Tree, 1971). Our plans continue succeeding even today (SGP 2012). Day by day, our goals grow loftier, while being bounded to reality still (SGP 2030).
- Outline too: We started long ago in pursuing environmental sustainability, and have achieved success in our past pursuits of environmental sustainability (Plant-A-Tree, 1971). Unrelenting, we continue working towards new horizons even today (SGP 2030). These plans are not just for show/grand exhibits either / We are not just talking the talk, but also walking the walk, (SGP 2012).
  - Singaporean, Associate Professor Winston Chow from SMU<sup>4</sup>, was elected as the co-chair of the IPCC<sup>5</sup> Working Group II — beating four other candidates through hard work and determination (countless nights of ploughing through thousands of research papers, and writing chapters for its report — all of it unpaid labour).
  - Challenge: Reduce dependency on fossil fuels to meet climate target obligations, while ensuring energy security.
  - Has large nature reserves and a third of our island is covered by trees already.
  - Singapore Green Plan 2012, launched by Ministry of the Environment in 2002.
    - \* Aim: To produce 60% of Singapore's energy needs using natural gas by 2012.
    - \* Success: As early as 2010, 79% of Singapore's electricity was being generated from natural gas. (Exceeded the Ministry of Environment ahead of schedule)
    - \* Benefit: Reduced air pollution: Natural gas is a cleaner form of energy compared to coal as it doesn't produce smoke.
    - \* Limitations: High costs: Natural gas requires complex treatment plants to process and pipelines to transport. These pipelines have high maintenance costs as they need to be laid underground and checked regularly for leakage.

<sup>4</sup>Singapore Management University

<sup>5</sup>Intergovernmental Panel on Climate Change



- Green Mark Scheme launched by Building Construction Authority in 2005. This scheme aims to encourage more new ‘green’ buildings, which are more energy efficient. ‘Green’ buildings like National Library building have reported energy savings of 15% to 35% compared to normal buildings
- Plant-A-Tree programme started in 1971 aims to maintain Singapore’s status as a Garden City by planting trees. The programme has planted an estimated 60,000 trees yearly
- Companies<sup>6</sup>
- Rando passage/paragraph as an exercise: In light of the capitalistic world we live in, we scoff at the thought of companies — whose mission is to maximise profits for shareholders — bringing more environmental benefit than harm in their existence. Indeed, many companies, especially the big players in big oil, are notorious for their environmental coverups and globally successful greenwashing. In fact, the American Petroleum Institute famously said that victory will be achieved when average citizens “understand” uncertainties in climate science. Underlying the not-so-subtle euphemism is the blatant intent to create unwarranted (and societally detrimental) distrust in climate science, just to gain short term corporate benefits. These disgusting practices by the biggest corporations often take the spotlight and leave people rightfully incredulous towards even the idea of large scale corporate good, even though there are exceptions. However, it would be distasteful to blindly believe in the impossibility of large scale corporate good just because the bad apples happen to be the shiniest ones. In fact, there is a whole blossoming collection of companies that benefit the environment substantially. *Not all, or even the majority, corporations are bound to irrevocably tarnish our environment.* The whole class of companies, known as “benefit corporations” make it their life’s purpose to do good to society, in this case, the environment...
- Yvon Chouinard, the owner of Patagonia, publicly donated all his voting stock to the Patagonia Purpose Trust, and all his nonvoting stock to the Holdfast Collective, a nonprofit organization “dedicated to fighting the environmental crisis and defending nature.” (2022)
- The family-owned, Pennsylvania-based construction firm High Industries, which had revenues of \$570 million in 2021, announced in 2022 that their eponymous High Foundation would assume control and ownership, to ensure the company benefits the community, even in the long run
  - (a) E.g. Immediately after, workers were offered the opportunity to direct \$100 each in foundation money to a local organization of their choice
  - (b) E.g. Months prior, the High Foundation made a \$65 million donation to Lancaster County Community Foundation
- “Shareholder foundations” have quietly prospered for decades in continental Europe, particularly in Denmark, where a quarter of the largest 100 firms are foundation-owned, including the three largest firms in the country: Carlsberg, Maersk, and Novo Nordisk.
  - \* Despite claims that firms will flounder without human owners and “market discipline,” foundation-owned firms have similar (and in some cases superior) financial performance compared with their investor-owned counterparts.
  - \* Danish researchers: Foundation-owned firms have more stable growth, are less volatile during crises, invest more in R&D, and have a longer lifespan compared with conventionally owned firms.
- Integrating philanthropy with corporate activities: the Novo Nordisk foundation funds basic science at Danish universities, and in doing so develops research (and researchers) that may benefit their pharmaceutical firms. (May appear *self-serving*)

<sup>6</sup>The Godly Reference: <https://hbr.org/2022/10/what-happens-when-a-company-like-patagonia-becomes-a-nonprofit?registration=success>



- For firms listed on the stock market, corporate philanthropy is “nice to have,” but is often secondary to profit maximization. Often, the two are in conflict.
  - \* E.g. Out of thousands of companies accorded B-Corp (Benefit Corporation) certification, only four have managed to go public in the U.S., one of which surrendered its status shortly after being listed in order to become more profit-oriented.
- The shareholder foundation model pragmatically overcomes this tradeoff: Because the shareholder is a philanthropic foundation, maximizing shareholder returns (via dividends) also maximizes potential donations. (Which is often indeed huge)
- Benefit Corporations
  - \* Benefit corporation status allows corporations to opt-out of shareholder primacy and opt-into stakeholder governance. (With stakeholder governance, a company is required to take into consideration anyone that is materially affected by that company’s decision-making, like workers, customers, local communities, wider society and the environment.)
  - \* Purpose: To create public benefit.
  - \* Accountability: Benefit corporations expand the obligations of boards. A board must consider the environmental and social factors. (as well as the financial interests of shareholders. This gives directors and officers the legal protection to pursue a mission and consider the impact their business has on society and the environment)
  - \* Transparency: Benefit corporations must report on their progress to achieve general public benefit.
- Foundation-owned companies that establish a successful balance go on to outperform their competition on multiple dimensions:
  - \* Robert Bosch Group — 94% owned by the Robert Bosch Foundation and 5% by the family
  - \* Siemens Group — 88% owned by investors<sup>7</sup>, 6% by the Siemens family
  - \* Both are two leading German conglomerates — major competitors in several markets — with similar economic performance and immense economic performance.<sup>8</sup>
  - Greater impact on society. Annually, Bosch Foundation spends 10 times the amount distributed by the Siemens Foundation — a traditional corporate foundation.
  - Greater stability. In contrast to Siemens, Bosch avoided massive layoffs during the Great Recession while increasing sales and remaining profitable over the subsequent decade.

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<sup>7</sup>65% owned by institutional investors like BlackRock, 23% by private investors

<sup>8</sup>80 billion euros in sales and 5 billion euros in net income