

Let's see examples by [section](#) of how the test tries to trick you and how we help you.

English Editing Writing: This section primarily tests a students' knowledge of the rules of English grammar. Although secondary, it also tests their ability to make stylistic decisions. There are many rules tested, but certain rules are tested far more than others. In addition to requiring knowledge of grammar, there are, of course, tricks that the test makers use.

How does the test trick you?

The English section employs many tricks, the primary two of which are playing on what sounds correct to the test taker when spoken but is not correct grammatically and separating the tested concept from what is important with long, irrelevant information. Additionally, the test uses idioms, spelling errors (diction), and almost completely correct answers to trap students.

How do we help?

Ivy Bridge ensures that students know all the tested grammar rules, the frequency of each and how to recognize when certain rules are tested. We expose them to every type of style question and how to edit these properly. Naturally on a POE test, there are strategies for elimination such as when two answers are essentially the same or which kinds of answers to favor when asked how an author perceives his/her piece: to change, add, subtract or make a point. For example

The painting was awfully charming and, despite the enormous price tag, five-thousand-mile journey, and painfully long, rigorous authentication process, would nicely compliment the Guggenheim's* collection. Just moments after first hanging on the wall, the public excitedly poured in to view it. Le Parfain's masterpiece always drew crowds: Rome, Paris, Santiago, and Sydney were packed.¹²

**art museum in Bilbao, Spain. Outside knowledge will not be needed to answer questions in the English or Reading sections.*

What are the subject and verb of the first sentence? Notice the filler between them. There are 2 errors in the first two sentences, can you spot them?

Of course, the ACT is a multiple-choice test and will provide possible answers. Ivy Bridge shows them how to take advantage of this fact.

11.

Which of the following substitutions to the underlined portion would be NOT acceptable?

Is the sentence correct as written? Yes... therefore

- A. crowds—** *The dash is no different from the colon on the ACT so it must be correct also*
- B. crowds;** *The semi-colon and period are also grammatically equivalent on the ACT. Take a look at answer choice C. Can you have two right answers?*
- C. crowds.** *No. So therefore if two answers are essentially the same, they must both be wrong.*
- D. crowds,** *Commas, despite how we use them in our electronic messages to indicate where we would pause while speaking, cannot separate two complete ideas.*

12.

Suppose the writer had chosen to write a brief paragraph on how paintings have become popular attractions.

Would this paragraph successfully fulfill the writer's goal?

- F. Yes,** because the paragraph indicates that painting has an international following.
- G. Yes,** because the paragraph cites the excitement of the public.
- H. No,** because the paragraph discusses only one painting.
- J. No,** because the paragraph implies that paintings have always been popular attractions.

The errors in the first two sentences are that 'compliment' when spelled this way is incorrect. A painting cannot give a compliment either written, spoken or otherwise. It can, however, compleMent a collection. The second error comes from the way we speak naturally. Obviously, we know the public is not hanging on the wall, but as the sentence is written, they are doing just that.... or I should say 'it', the public, is doing just that. Lastly, question **12** is an editing question, not a proofreading one. Have a 'yes' or 'no' in your mind before you read the options so you only have to deal with two answers because they can be tricky and convincing. The question is also tricky in this case, conflating the plural paintings with a singular painting. Answer H.

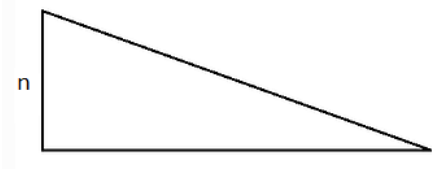
Math: The questions at the beginning of this section test basic math knowledge with few tricks. The middle ones also test basic math knowledge, yet with many tricks. The end of the section has the hard questions which are difficult due to tricks, higher level math concepts tested and time consumption.

How does it trick you?

Answers that are correct if a common careless error is made, questions that have a lot of vocabulary and wording, misdirection in what the question is asking for and misleading figures (usually not drawn to scale) are the primary obstacles the test makers construct.

How do we help?

Many students who are great at math still miss easy or medium questions because of the trap answers; the student knows the basic math required from the question but then falls for the trick built into the question, answers or both. Ivy Bridge not only teaches how to avoid the traps, but also how to minimize the time it takes to answer the questions by looking at the questions strategically (big picture) first and eliminating wrong answers. For example:

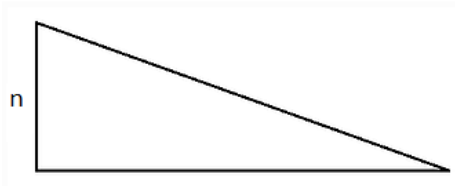


11.

In the figure above, what is the product of the middle length side and perimeter if one side has length n which is the sum of the first two consecutive non-negative even integers and the other sides' lengths the next two consecutive integers greater than n ?

- A. 27
- B. 48
- C. 504
- D. 576
- E. Cannot be determined from the information given

- Did you waste time multiplying big numbers?
- Did you struggle with any vocabulary or the complexity of the question?
- Did you read the question the way they wanted you to?
- The answer is A.
- Product means to multiply, the perimeter is the distance around the figure, sum means to add, consecutive means in a patterned order, non-negative means zero or greater than zero, and even means divisible by 2.
- $0+2=2$ This is side n
- The next two consecutive integers are 3 and 4, the sides of the middle and long sides respectively. (not consecutive even integers! they are tricky so read carefully!)
- The perimeter is $2+3+4=9$
- $9 \times 3(\text{the middle side length})=27$



12. In the figure above, what is the area of the triangle if the length of side n is 2 and middle length side is 3?

- F. 27
- G. 48
- H. 504
- J. 576
- K. Cannot be determined from the information given

Not drawn to scale, but cannot lie about a right angle if it is marked. Answer is K because the height is unknown.

The ACT has 5 answer choices for their math multiple choice and they alternate from A-E on odd numbered questions to F-G-H-J-K on even numbered questions. (The SAT only has 4 answer choices on the multiple choice math section.)

Reading Reading Comprehension: This section is based on a variety of skill evaluations such as the ability to recognize key points, make generalizations from the evidence, decide what evidence supports a conclusion, consider the author's intentions, and occasionally predicting how the passage or author might fit into criteria outside of the passage based on its characteristics.

How does the test trick you?

The passages are not nearly as difficult as those on graduate school exams like the MCAT, GRE, LSAT and GMAT. Therefore, test makers confuse the student and use his/her limited time with some trick questions and many types of trick answers like part-right part-wrong, true-but-unrelated, outside the line range of the question, too literal, too specific or too general, extreme language, and recycled language.

How do we help?

Many competitors can over a long period of time improve a student's reading comprehension (and other basics) using traditional approaches and copious repetitive drills. Ivy Bridge will improve the student's reading comprehension ability with a variety of the best methods and most efficient tactics. Additionally, Ivy Bridge focuses heavily on test taking strategy. We are the

experts at pointing out each type of trap so that the student can systematically recognize and avoid them. Of course, we also show what good answer choices look like—Must be true using broad, inoffensive, and/or synonymic language. And in terms of global strategy, Ivy Bridge instructs students how to master the passage’s material quickly and manage the question order so the student has the time he/she needs to process and eliminate the trap answers, ultimately making the best selection. Please see passage below.

Passage I
 PROSE FICTION: This passage is adapted from Carson McCullers’ story “A Tree, A Rock, A Cloud” (Collected Stories, ©1987).

“But a sudden piece of glass on the sidewalk. Or a nickel tune in a music box. A shadow on a wall at night. And I would remember. It might happen in a street and I would cry or bang my head against a lamppost. You follow me?”

“A piece of glass . . .” the boy said.

5 “Anything. I would walk around and I had no power of how and when to remember her. You think you can put up a kind of shield. But remembering don’t come to a man face forward—it corners around sideways. I was at the mercy of everything I saw and heard. Suddenly, instead of me combing the countryside to find her, she began to chase me around in my very soul. She chasing me, mind you! And in my soul.”

The man leaned his head down and tapped his forehead on the counter. For a few seconds he stayed bowed over in this position, the back of his stringy neck covered with orange furze, his hands with their long warped fingers held palm to palm in an attitude of prayer. Then the man straightened himself; he was smiling and suddenly

15 his face was bright and tremulous and old.

“It was in the fifth year that it happened,” he said. “And with it I started my science.”

“What happened?” the boy asked.

The old man’s voice was high and clear: “Peace,” he answered.

20 “It is hard to explain scientifically, son,” he said. “I guess the logical explanation is that she and I fled around from each other for so long that finally we just got tangled up together and lay down and quit. Peace. A queer and beautiful blankness. It was spring in Portland and the rain came every afternoon. All evening I just stayed there on my bed in the dark. And that is how the science come to me.”

25 “It is this. And listen carefully. I meditated on love and reasoned it out. I realized what is wrong with us. Men fall in love for the first time. And what do they fall in love with?”

The old man reached over and grasped the boy by the collar of his leather jacket. He gave him a gentle little shake and his green eyes gazed down unblinking and

30 grave.

“Son, do you know how love should be begun?”

The boy had considered love before and found it amusing. Now he sat small and listening

and still. Slowly he shook his head and heard wonderful, magical wisdom. The old man leaned closer and whispered: “A tree. A rock. A cloud.”

It was still raining outside in the street: a mild, gray, endless rain. The mill whistle blew for the six o’clock shift and the three spinners paid and went away. There was no one in the café but Leo, the old man, and the little paper boy.

“The weather was like this in Portland,” he said. “At the time my science was begun. I meditated and I started very cautious. I would pick up something from the street and take it home with me. I bought a goldfish and I concentrated on the goldfish and I loved it. I graduated from one thing to another. Day by day I was getting this technique. On the road from Portland to San Diego—”

“Aw, shut up!” screamed Leo suddenly. “Shut up! Shut up!”

The old man still held the collar of the boy’s jacket; he was trembling and his face was earnest and bright and wild. “For six years now I have gone around by myself and built up my science. And now I am a master, son. All strangers and all loved! Do you realize what a science like mine can mean?”

The boy held himself stiffly, his hands curled tight around the counter edge. Finally he asked: “Did you ever really find that lady?”

55 “What? What say, son?”

“I mean,” the boy asked timidly, “have you fallen in love with a woman again?”

The old man loosened his grasp on the boy’s collar. He turned away and for the first time his green eyes had a vague and scattered look. He lifted the mug from the counter, drank down the yellow beer. His head was shaking slowly from side to side. Then finally he answered: “No, son. You see that is the last step in my science. I go cautious. And I am not quite ready yet.”

“Well!” said Leo. “Well! well! well!”

65 The old man stood in the open doorway. “Remember,” he said. Framed there in the gray damp light of the early morning he looked shrunken and seedy and frail. But his smile was bright. “Remember I love you,” he said with a last nod. And the door closed quietly behind him.

3. The description of the boy in lines (32-36) imply that he initially viewed love as **Tricky question; focus on the word 'initially'**

a) decent

b) emotional

c) amazing

d) exciting

5. The boy's reaction to the old man is best described as being:

A. tense but rapt. *part right part wrong... rapt is extreme language in this case*

B. uneasy but fascinated.

C. harsh and unyielding.

D. scientific and critical.

10. The main purpose of lines 52–57 is to show how the old man: **Author's intention question**

F. became an avid collector of discarded objects. *too literal; usually too literal is wrong for another reason too so they can defend their answer. In this case, the goldfish wasn't discarded. But for reading comprehension it is important to note that the main purpose here is about his learning to love*

G. realized loving a woman first is difficult *true, but not found in these lines*

H. began to develop his science. *Broad and soft! A likable answer!*

J. meditated cautiously and graduated from Portland *Recycled Language- answer uses words from the passage that don't maintain the meaning*

Science: This section has a variety of visual data and verbal evidence that test student's ability to analyze and synthesize information with little (but not zero) outside scientific knowledge. The 6-8 experiments/trials/scientific explanations and 4-6 questions relating to them are not created equal: some problems, graphs, charts, and reading are significantly easier than others.

How does it trick you?

Getting you to waste your time on complicated pictorial information, confusing wording, one word in a long question that changes everything (i.e. reciprocal or difference), providing seemingly correct answers based on the student looking at the wrong variable and overly technical verbal information.

How do we help?

First, to make sure that all the basic outside scientific knowledge, which is a small amount, is known. Time management, experiment selection, quick correlation comprehension, understanding and translating the graphical and written data, and quick answer elimination. For example, lets look at what kind of problems NOT to do first.

Passage VI
(No Visuals)

Scientist 1

Increasing CH₄ levels are a serious concern because, in the atmosphere, CH₄ can be converted into formaldehyde (H₂CO). H₂CO is a dangerous chemical, banned in some countries and used as an embalming fluid in others.

When ozone (O₃) is struck by solar radiation (light) in the presence of water, hydroxyl radicals (·OH) are created (Reaction 1):



When OH comes into contact with CH₄, another radical, ·CH₃, is formed (Reaction 2):



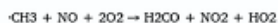
In the presence of oxygen (O₂) and nitric oxide (NO), the highly reactive ·CH₃ is converted into H₂CO (Reaction 3):



The product HO₂ is unstable and reacts with NO, yielding more ·OH (Reaction 4):

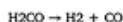


Together, Reactions 2–4 are called a chain reaction because the OH formed in Reaction 4 can react with another CH₄ molecule in Reaction 2:

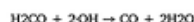


Scientist 2

H₂CO is a dangerous chemical, but atmospheric formaldehyde levels will not increase dramatically due to methane emissions. Carbon monoxide (CO) generation may be the greater concern. Hydroxyl radicals can break down methane, leading to the formation of H₂CO and nitric oxide, as in Reactions 1–4; in the presence of light, however, H₂CO quickly decomposes to CO and hydrogen, H₂ (Reaction 5):



Furthermore, the OH generated by Reactions 1 and 4 will react rapidly with any H₂CO in the atmosphere to produce CO and water: (Reaction 6)



In addition to reducing the amount of H₂CO by breaking down the H₂CO molecule, this reaction removes OH from the atmosphere, inhibiting the chain reaction of Reactions 2–4.

Passage III
(Too Many And/Or Strange Visuals And/Or New Equations)

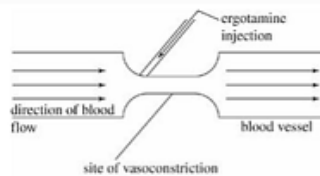


Figure 1

The diameter of the blood vessel at the site of vasoconstriction is less than the diameter of the normal blood vessel, so blood flow has a higher velocity through this narrow site. As a result, the blood pressure in the site of vasoconstriction is less than the blood pressure in the normal blood vessel. Moreover, the higher the velocity of the blood flow through the site of vasoconstriction, the lower the blood pressure at that site.

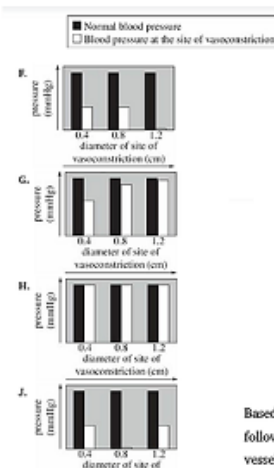
The percent change in blood pressure (%ΔBP) can be defined as:

$$\% \Delta BP = 100 \times \frac{(\text{Normal blood pressure} - \text{Pressure at site of vasoconstriction})}{\text{Normal blood pressure}}$$

Experiment 3

The artificial heart used in Experiment 1 was used to pump different volumes of blood at a constant rate of 90 beats per minute through five blood vessel sections with the same diameter at the site of vasoconstriction. The %ΔBP values were then measured.

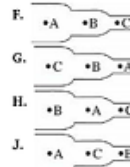
Volume of blood pumped (mL)	%ΔBP
400	8.4
450	8.8
500	9.3
550	9.7
600	10.2



Rate of artificial heart beat (beats per minute)	%ΔB
60	1.2
90	9.3
120	22.5
150	45.1

Location	Velocity of blood flow (mL/min)	Blood pressure (mmHg)
A	500	31
B	1,000	29
C	900	30

Based on the information in the passage about blood flow, which of the following diagrams best represents the relative diameters of the three blood vessel regions?



These problems of course are solvable, but should never be attempted first. The questions all have the same value so why risk getting stuck when you could be getting points? Visual data, especially simple graphs and simple charts, provide easily digestible relevant information quickly allowing immediate comprehension and bad answer elimination. Without any graphic representations, it takes time and reading comprehension --at the end of a long test-- to unearth the desired information.

On the other hand, passages with too many, too complicated or just plainly bizarre diagrams require time to understand. With lots of tables and charts, there is the chance of having to draw data from multiple sources which costs valuable seconds and/or leads to confusion--confusion that can be intentionally exploited in the questions and answers. And what if they introduce a new mathematical formula? Again, there are ways to cut through the difficulties, but with four or five easier passages, why not attempt those first?

Take a look at a Do Now passage.

Passage II (Just The Right Amount of Visuals and Question Format) Do not need to do this problem, just notice the visuals, question and answer lengths.

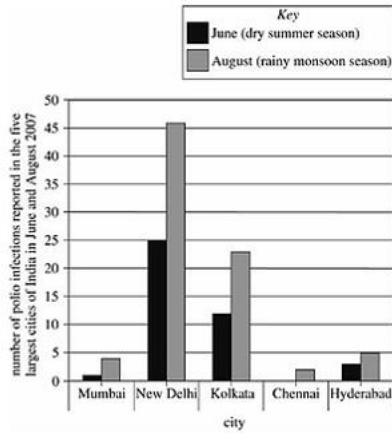


Figure 2

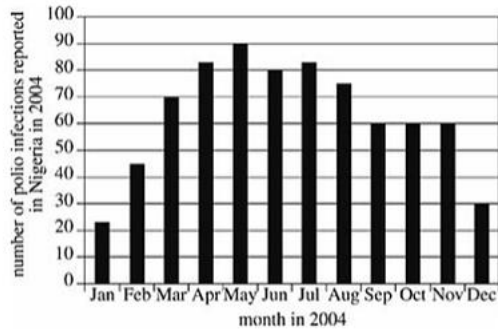


Figure 1

7. According to [Figure 1](#), the greatest increase in the number of reported polio infections in Nigeria occurred between which two months?
- January and February
 - February and March
 - April and May
 - November and December
8. It is estimated that for every person infected with the polio virus in an endemic country, there are 200 people at risk for contracting the virus. Given the results of Study 1, how many people would have been at risk for becoming infected with the polio virus in Nigeria in June 2004?
- 80
 - 200
 - 800
 - 16,000
9. Given the information in [Figure 2](#), which of the following might explain the difference in reported cases of polio in major Indian cities between June and August of 2007?
- Water is more likely to become contaminated with polio-infected human waste in periods of high rainfall.
 - Water is less likely to become contaminated with polio-infected human waste in periods of high rainfall.
 - The polio virus infects more people in India during the summer and monsoon seasons than during the autumn and winter seasons.
 - Those diagnosed with the polio virus in June are able to recover by
10. Which of the following hypotheses was most likely tested in Study 2?
- The number of reported cases of polio infections varies significantly between Nigeria and India.
 - Most cases of polio infections are not reported to medical authorities in India.
 - Polio infections affect more people in certain regions in India than in other regions.
 - The number of reported cases of polio infections in India is greatest during the summer and least during the winter.

- 11.** Polio-endemic countries are located in warm climates that harbor many mosquitoes. Would the presence of mosquitoes directly affect the transmission of the polio virus?
- A. Yes, because the polio virus is primarily transmitted through mosquitoes.
 - B. Yes, because the polio virus is primarily transmitted through human waste.
 - C. No, because the polio virus is primarily transmitted through mosquitoes.
 - D. No, because the polio virus is primarily transmitted through human waste.
- 12.** The comparison of reported polio infections in India in 2007, as shown in [Figure 2](#), indicates that relative to the number of people in Kolkata infected with polio in June, the number of people infected with polio in Kolkata in August was approximately:
- F. half as much.
 - G. the same.
 - H. twice as much.
 - J. ten times as much.

Passage II had only 2 studies and one easy to understand figure for each. There were few variables, clear pictorial graphs and easy to determine relationships. Additionally, the questions and answers were short simple at first glance. This passage is an ideal starting point. Now, let's go below to see more about what kind of questions and answers are ideal.

9.

If the initial concentration of pesticide within a primary consumer is equal to the concentration of one square meter of crop, then according to Studies 1 and 3, as a tertiary consumer, a human consuming animals from the vicinity of crops sprayed with pesticide C four days ago could eat meat with a concentration of pesticides that is:

Here is an example of a long question with lots of complicated wording as well as an example of when some outside science knowledge helps. In this case the knowledge would be provided in a chart or within a paragraph, but does the student know what a primary or tertiary consumer is?

14.

In Trial 5, is it likely that bubbles were present in large numbers in the cola immediately before the can was shaken?

F. Yes; based on the results of Experiment 1, the bubbles generated in Trial 4 probably lasted for less than 10 minutes.

G. Yes; based on the results of Experiment 1, the bubbles generated in Trial 4 probably lasted for more than 1 hour.

H. No; based on the results of Experiment 3, the bubbles generated in Trial 4 probably lasted for less than 1 hour.

J. No; based on the results of Experiment 3, the bubbles generated in Trial 4 probably lasted for more than 2 hours.

In the one problem that does have long answers, students would NOT need to read the entirety of them: The first word confirms or eliminates the answer as possible. Is it yes or no? Pow! 2 answers gone immediately. Next, only need to focus on one other phrase, *less than ten minutes* or *more than one hour*-- a HUGE difference. Now the students have just answered quickly and accurately, saving time for more difficult ones.

Writing:

The ACT writing consists of a single essay with three different possible perspectives to choose from. Students are judged on their ideas, analysis, development, support, organization, and to a much lesser degree, language use.

How does it trick you?

On the writing, you can only trick yourself. Students don't directly answer the question, go off topic, or get carried away and run out of time. Choosing an answer, structuring the response correctly, and properly using evidence is all that is required. Do not deviate too far or try to write what you believe instead of what is easiest to defend.

How do we help?

In line with our entire system on the other sections, Ivy Bridge teaches the students how to score well by developing their techniques and showing what the test makers perceive. To that end, we instruct them to choose an easy to defend answer, how to organize the essay, present and link evidence to support their thesis as well as a few other techniques that boost scores. From the other perspective, we have the students grade previous responses, seeing the strengths and weaknesses of other papers and how the ACT scores them.

Public Health and Individual Freedom

Most people want to be healthy, and most people want as much freedom as possible to do the things they want. Unfortunately, these two desires sometimes conflict. For example, smoking is prohibited from most public places, which restricts the freedom of some individuals for the sake of the health of others. Likewise, car emissions are regulated in many areas in order to reduce pollution and its health risks to others, which in turn restricts some people's freedom to drive the vehicles they want. In a society that values both health and freedom, how do we best balance the two? How should we think about conflicts between public health and individual freedom?

Read and carefully consider these perspectives. Each suggests a particular way of thinking about the conflict between public health and individual freedom.

Perspective One

Our society should strive to achieve the greatest good for the greatest number of people. When the freedom of the individual interferes with that principle, freedom must be restricted.

Perspective Two

Nothing in society is more valuable than freedom. Perhaps physical health is sometimes improved by restricting freedom, but the cost to the health of our free society is far too great to justify it.

Perspective Three

The right to avoid health risks is a freedom, too. When we allow individual behavior to endanger others, we've damaged both freedom and health.

While I would prefer to write about the second perspective because I feel freedom is most important, I will address the first perspective because I know a lot about utilitarianism and I can easily think of many examples. **The ACT doesn't care about your opinions so only write what you feel if it is also what you can write best. If the ACT reader thinks you don't believe your own argument but your essay is well written that is not a problem but the reverse is a huge problem.**

Let's take a look at two essays and consider how the test maker would grade each. Consider the strengths and weaknesses of both as well in order to mimic and avoid them.

Essay 1

Humans are all individuals, but nonetheless are part of the group called humanity which is divided into teams called societies. Individuals, like children, frequently crave freedom to do as they

please regardless of the consequences to themselves and others. Even if the consequences are negative only to themselves, as part of a society, it hurts others because it sets a bad example or drags the team down. It's like having to play with someone on your team who you cannot kick off and won't quit but is selfish and causes your team to suffer. Therefore, when it comes to a topic like public health, people's freedom is immaterial. Societies should enforce public health at all costs so that they can promote happiness like that found in Nordic countries, save themselves like in the book *Ender's Game* and pursue virtue like the United States in the Civil War.

Public Health encompasses many aspects, including physical and mental health. The only universal commonality among humans is a desire for happiness. The Nordic countries have been in the top 10 of every United Nations World Happiness Report rankings since the beginning of the analysis. They have the best and most expensive health care systems of any nation, afforded by the highest tax rates in the world. But their citizens chose to have these high taxes because it promotes *hygge* or community support. It also encourages people to care about their physical health so as to not be a burden on their fellow countrymen. Outsiders in countries with much lower tax rates and less responsibility to their society would appreciate their freedom to choose what they pay for and how to care about others in their society. These societies have more violence, corruption and as mentioned before, no set of countries is as happy—which via the pleasure principle is the only universally agreed upon measurement-- as those countries who take freedom from the individual for the greater good of the society, where in fact the individuals are better off as a result.

Similar to the previous case, the need to restrict freedom for a greater good occurred during the American Civil War. The United States at that time seemed to be one of the most freedom advantaged countries in the world, at least to non-slaves. But a nearly universally accepted evil, slavery, persisted and was a cancer for the whole nation. The president at the time, in order to heal the country, had to restrict freedoms. President Lincoln violated Habeas Corpus, numerous other Constitutional laws protecting individual freedom and conscripted soldiers against their will in order to hold the society together and end slavery. How can a champion of individual freedom chastise the president at that time for his violations when so many people had literally no individual freedom? Further, slavery is unhealthy to both the slave and the owner and as a matter of public health the United States was better off without it. Lastly, no serious scholar would argue the United States is worse off as one nation instead of two. The European powers could have more easily played the two sides off each other, weakening both the Union and Confederacy. Again, it is clear that personal freedoms cannot outweigh the greater good or tiny societies (the southern states) can make their own rules which harm both individuals within them (slaves) or the greater society (USA vs. the world).

Just as in the cases above where the best interests of the many outweigh any consideration of the freedom of the individual, the book *Ender's Game* demonstrates the same principle. Obviously, if Earth were destroyed it would be very bad for public health. The book chronicles Earth's preparation for an imminent alien attack; the previous attack came a hair breadth's shy of total annihilation of humanity. The book's principle character is a boy who is to be trained to lead the Earthling forces. His parents have no say as to whether he is recruited and the commanders constantly manipulate him in order to prepare him to defend the masses- they sacrifice his individual freedom for the greater good. The commanders made a good choice because he does save the world. If his individual freedoms were respected and Earth was destroyed, then where would be those who fight for individual rights at the

expense of the society? Their principle breaks down in an extreme situation, meaning it is no principle at all.

Public health, like many other important aspects of society from law to social norms, affects everyone. That is to say, it cannot be compartmentalized. Therefore, individual freedoms are absolutely subordinate to maximizing the good of the greatest number. However, it really isn't so hard to imagine the other side in which individual freedoms should be the chief concern. Suppose there are four Nobel prize winning patients in a hospital who will die very soon without a liver, heart, pancreas and lung respectively and a healthy man comes in for a routine check-up. Should he just be harvested to save the four others? Of course not! Unfortunately for that side of the argument, even this criticism fails against the greatest good for the greatest number. The healthy patient's freedom should be respected because people would hear about what happened and stop going in for check-ups which would adversely affect the public health of the entire society: the principle that can always be applied is the greatest good for the greatest number—even individual rights can be said to be a tool for this principle. Public health is but one of many ways to prove that point along with the examples of pursuing happiness, morality and even existence itself.

Special Techniques

Analogy

“It's like having to play with someone on your team who you cannot kick off and won't quit but is selfish and causes your team to suffer.”

Rhetorical Question

“...where would be those who fight for individual rights at the expense of the society?”

Transition Sentences

“Just as in the cases above where the best interests of the many outweigh any consideration of the freedom of the individual, the book *Ender's Game* demonstrates the same principle.”

Referencing Official Data or Experiments

“The Nordic countries have been in the top 10 of every United Nations World Happiness Report rankings since the beginning of the analysis.”

Using Special Vocabulary

“But their citizens chose to have these high taxes because it promotes *hygge* or community support.”

Historical Reference

“President Lincoln violated Habeas Corpus, numerous other Constitutional laws protecting individual freedom and conscripted soldiers against their will in order to hold the society together and end slavery.”

The above essay may not be perfect, but you do not need perfect to get a perfect score.

Grammar Tested

- Punctuation
- Pronouns
- Verb Tense
- Subject/Verb Agreement
- Comparisons
- Parallel Construction
- Faulty Modifiers
- Diction

Math Tested

The Major Categories Pre-Algebra (20-25%), Elementary Algebra (15-20%), Intermediate Algebra (15-20%), Coordinate Geometry (15-20%), Plane Geometry (20-25%), and Trigonometry (5-10%)

Test The Following Specific Math Concepts

- Basic operations using whole numbers, decimals, fractions, and integers
- Place value
- Square roots and approximations
- The concept of exponents
- Scientific notation
- Factors
- Ratio, proportion, and percent
- Linear equations in one variable
- Absolute value and ordering numbers by value
- Elementary counting techniques and simple probability

- Data collection, representation, and interpretation
- Understanding simple descriptive statistics
- Properties of exponents and square roots
- Evaluation of algebraic expressions through substitution
- Using variables to express functional relationships
- Understanding algebraic operations
- The solution of quadratic equations by factoring
- Absolute value equations and inequalities
- Sequences and patterns
- Systems of equations
- Quadratic inequalities
- Functions and modeling
- Matrices
- Roots of polynomials
- The quadratic formula
- Rational and radical expressions
- Complex numbers
- Graphing; relations between equations and graphs, including points, lines, polynomials, circles, and other curves
- Graphing inequalities
- Slope
- Parallel and perpendicular lines
- Distance
- Midpoints
- Conics
- Properties and relations of plane figures, including angles and relations among perpendicular and parallel lines
- Properties of circles, triangles, rectangles, parallelograms, and trapezoids
- Transformations
- The concept of proof and proof techniques
- Volume
- Applications of geometry to three dimensions
- Trigonometric relations in right triangles
- Values and properties of trigonometric functions
- Graphing trigonometric functions
- Modeling using trigonometric functions
- Use of trigonometric identities
- Solving trigonometric equations

The following types of calculators are prohibited:

- Calculators with built-in or downloaded computer algebra system functionality, including:

Texas Instruments:

- All model numbers that begin with TI-89 or TI-92
- TI-Nspire CAS

Note: The TI-Nspire is permitted if not marked CAS.

Hewlett-Packard:

- HP Prime
- HP 48GII
- All model numbers that begin with HP 40G, HP 49G, or HP 50G

Casio:

- fx-CP400 (ClassPad 400)
- ClassPad 300 or ClassPad 330
- Algebra fx 2.0
- All model numbers that begin with CFX-9970G

- Handheld, tablet, or laptop computers (including PDAs)
- Electronic writing pads or pen-input devices
Note: The Sharp EL 9600 is permitted.

- Calculators built into cell phones or any other electronic communication devices
- Calculators with a typewriter keypad (letter keys in QWERTY format)
Note: Letter keys not in QWERTY format are permitted.