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Table of Contents

Section I: Verbal Reasoning	3
Section II: Grammar/Writing	21
Section III: Quantitative Reasoning	39
Each section will have a corresponding time limit. Do not begin the next section until told to do so. The times for each section are:	

Verbal Reasoning: 45 minutes Grammar/Writing: 40 minutes Quantitative Reasoning: 50 minutes

If you finish a section early, you may use the remaining time to check your work, but only on that section. If you have any questions, raise your hand and ask your test proctor.

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Section I: Verbal Reasoning

Instructions:

You will have 45 minutes to complete Section I.

Read each passage and answer the corresponding questions to the best of your ability. 10 questions will follow each of the 4 passages, for a total of 40 questions. Choose your answer based on the evidence given in the passage; no outside knowledge is required.

The final two questions for each passage will be analogy questions. Use your knowledge of the passage and the relationships demonstrated within it to arrive at your answer and complete each analogy.

Literature

This passage is adapted from J. Henri Fabre's The Story-Book of Science, originally published in French and translated into English in 1917 by Florence Constable Bicknell.

- One evening, at twilight, all six of them were assembled in a group. Uncle Paul was reading in a large book. He always reads to rest himself from his labors, finding that after work nothing refreshes so much as communion with a book that teaches us the best that others have done, said, and thought.
- ¶2 Uncle Paul is an excellent, God-fearing man, obliging to everyone, and "as good as bread." The village has the greatest esteem for him, so much so that they call him Maître Paul, on account of his learning, which is at the service of all.
- ¶3 To help him in his field work—for I must tell you that Uncle Paul knows how to handle a plow as well as a book, and cultivates his little estate with success—he has Jacques, the old husband of old Ambroisine. Mother Ambroisine has the care of the house; Jacques looks after the animals and fields. They are better than two servants; they are two friends in whom Uncle Paul has every confidence.
- If Uncle Paul has no family; he is alone, yet he is never happier than when with children, children who chatter, who ask this, that, and the other, with the adorable ingenuousness of an awakening mind. He has prevailed upon his brother to let his children spend a part of the year with their uncle. There are three: Emile, Jules, and Claire.
- The six of them were gathered together. Uncle Paul was reading in a big book, Jacques braiding a wicker basket, Mother Ambroisine plying her distaff, Claire marking linen with red thread, Emile and Jules playing with the Noah's Ark. And when they had lined up the horse after the camel, the dog after the horse, then the sheep, donkey, ox, lion, elephant, bear, gazelle, and a great many others—when they had them all arranged in a long procession leading to the ark, Emile and Jules, tired of playing, said to Mother Ambroisine: "Tell us a story, Mother Ambroisine—one that will amuse us."
- ¶6 And with the simplicity of old age Mother Ambroisine spoke as follows, at the same time twirling her spindle:
- ¶7 "Once upon a time there lived a woodchopper and his wife, and they were very poor. They had seven children, the youngest so very, very small that a wooden shoe answered for its bed."
- ¶8 "I know that story," interposed Emile.
- "There is no truth in that," declared Jules, "nor in Puss-in-Boots, nor Cinderella, nor Bluebeard. They are fairy tales, not true stories. For my part, I want stories that are really and truly so."
- ¶10 At the words, true stories, Uncle Paul raised his head and closed his big book. A fine opportunity offered for turning the conversation to more useful and interesting subjects than Mother Ambroisine's old tales.

This passage has been excerpted and adapted from the original, including minor punctuation changes, spelling changes, and other modifications that have not substantially changed content or intent.

- 1. Which of the following best describes Uncle Paul's views towards reading?
 - A) He feels that reading is a desirable hobby so long as it has a direct bearing on one's daily work.
 - B) He believes that reading is a useful tool for teaching moral instruction but not practical learning.
 - C) He feels that reading is an enjoyable activity that has the potential to amuse as well as instruct.
 - D) He believes that reading is a fun pastime, especially in the case of fairy tales for children.
- 2. Which lines in the passage best support the answer to the previous question?
 - A) Paragraph 1, Sentence 3 ("He always . . . thought")
 - B) Paragraph 2, Sentence 2 ("The village . . . all")
 - C) Paragraph 5, Sentence 2 ("Uncle Paul . . . Ark")
 - D) Paragraph 10, Sentence 2 ("A fine . . . tales")
- 3. The scene in the passage can be most accurately described as
 - A) a family reunion.
 - B) an evening of repose.
 - C) a community gathering.
 - D) a session of school.
- 4. Which of the following best describes the structure of the passage?
 - A) The passage opens with background on the characters, their relationships, and their activities before moving into action.
 - B) The passage opens with a philosophical argument before moving on to the primary narrative.
 - C) The passage opens with a description of setting and place before moving on to describe the characters' physical appearances.
 - D) The passage opens with a stretch of dialogue before moving into a series of quick actions.
- 5. Emile, Jules, and Claire are the children of Uncle Paul's
 - A) sister.
 - B) brother.
 - C) great aunt.
 - D) great uncle.

- 6. Which of the following children was NOT playing with the Noah's Ark?
 - A) Emile
 - B) Jules
 - C) Claire
 - D) All of the children were playing with the Noah's Ark.
- 7. In Paragraph 8, Sentence 1, the word "interposed" most closely means
 - A) meddled.
 - B) interfered.
 - C) negotiated.
 - D) interjected.
- 8. At the end of the passage, Uncle Paul most likely prepares to
 - A) chastise Jules for his rudeness.
 - B) tell the children it's time for bed.
 - C) begin a discussion about stories.
 - D) start the children's first daily lesson.
- 9. Jacques: animals and fields::
 - A) Mother Ambroisine: house
 - B) Mother Ambroisine: farm
 - C) Uncle Paul: house
 - D) Uncle Paul: farm
- 10. Bluebeard : fairy tale ::
 - A) fairy tale : true story
 - B) story: Cinderella
 - C) plow: tool
 - D) tale: book

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Turn the page for the next passage.

Science

This passage is adapted from Sam Hardman and Sarah Dalesman's "Bold and aggressive behavior means birds thrive in cities," first published in 2018 in The Conversation. Licensed under CC BY-ND.

- Most people probably wouldn't consider bustling towns and cities good places for nature to thrive. Yet a few species of birds have so successfully adapted to city living that they boast large and thriving urban populations. Now, research has suggested that the success of these city-dwelling species may lie in their behavior.
- ¶2 Urban habitats are quite different from the natural environments in which birds evolved. Cities are noisy places; they are lit almost continually with artificial lights, and they contain an abundance of food. Cities are also full of people. This means birds living there rarely get any peace and must cope with almost constant disturbance from both humans and their pets.
- ¶3 But birds living in cities are known to be much more tolerant of human disturbance than their rural compatriots. In a study of 44 European bird species, all but four allowed humans to approach them more closely in cities than in rural habitats. This suggests that city birds are bolder in the face of a potential threat.
- It's not only towards humans that urban birds seem to be bolder. Urban song sparrows (*Melospiza melodia*) have been found to be more aggressive towards each other during the breeding season. Why urban birds should be bolder and more aggressive than their rural cousins is not yet fully understood. One possibility is that in cities, where space is limited, only the most aggressive individuals are able to hold a territory.
- ¶5 In addition to researching levels of aggression, we also looked at how consistent males were in their aggressive displays. This consistency in the way animals behave over time is often referred to as "animal personality." Urban birds showed lower levels of consistent behavior. This could be due to the fact that urban males experience greater fluctuation in their environment on a day-to-day basis.
- As well as aggressive behavior, being bold may also help birds survive in the city. Bolder birds have been shown to be more willing to explore new environments and to find new types of food to eat. As cities are vastly different from natural habitats, and contain many new types of food, boldness is likely to be a very useful trait for urban birds to have.
- ¶7 The big question which remains for ecologists is whether birds in cities are evolving to suit their new urban environment. A recent study has shown genetic differences between rural and urban bird populations which suggests this may be the case.

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This passage has been excerpted and adapted from the original, including minor punctuation changes, spelling changes, and other modifications that have not substantially changed content or intent.

Years that Bird Species Migrated to Urban Environments

Bird Population	Year
Ardea cinerea	1952
Carduelis chloris	1971
Parus caeruleus	1983
Acrocephalus scirpaceus	2004

A scientist creates a table showing the year that certain bird species migrated to urban environments, shown above.

CLI, 2018, Data from https://link.springer.com/article/10.1007%2Fs00265-008-0636-y.

- 11. The authors of the passage would likely agree that
 - A) rural birds fare better when they migrate to the city.
 - B) urban birds are evolving to fit their environment.
 - C) less aggressive birds thrive in urban environments.
 - D) urban environments change too rapidly for birds to adapt.
- 12. Which lines in the passage best support the answer to the previous question?
 - A) Paragraph 2, Sentences 1 and 2 ("Urban habitats . . . food")
 - B) Paragraph 5, Sentences 1 and 2 ("In addition . . . personality")
 - C) Paragraph 6, Sentences 2 and 3 ("Bolder birds...have")
 - D) Paragraph 7, Sentences 1 and 2 ("The big . . . case")
- 13. The authors approach the subject of the passage with
 - A) keen interest.
 - B) troubled doubt.
 - C) unchecked excitement.
 - D) cautious hope.

- 14. Which of the following best sums up the main point of the passage?
 - A) Unless we make radical changes immediately, urban bird populations will continue to decline and possibly become extinct.
 - B) The success and survival of birds in urban environments may be largely attributed to certain behavioral traits.
 - C) Despite some conflicting evidence, it is possible to conclude that the similarities between rural and urban bird populations are greater than their differences.
 - D) Though urban bird populations are often violent and aggressive, they are surprisingly less bold than many rural bird populations.
- 15. The authors use which of the following in support of their argument?
 - A) Historical records
 - B) Statistical analysis
 - C) Scientific studies
 - D) Personal anecdotes
- 16. In Paragraph 5, Sentence 4, the phrase "greater fluctuation" most closely means
 - A) more variability.
 - B) higher movements.
 - C) nobler instability.
 - D) grander fluorescence.
- 17. According to the passage, when birds experience a greater fluctuation in their environment, they often display
 - A) higher levels of consistent behavior.
 - B) lower levels of consistent behavior.
 - C) higher levels of aggressive behavior.
 - D) lower levels of aggressive behavior.
- 18. Based on the table, which of the following populations moved to an urban environment most recently?
 - A) Acrocephalus scirpaceus
 - B) Parus caeruleus
 - C) Carduelis chloris
 - D) Ardea cinerea

19. city: urban::

A) nature: town
B) country: rural

C) habitat : environmentD) natural : artificial

20. bold: explore new environments::

A) tolerant : accept potential threatsB) consistent : defend against attackers

C) noisy: migrate to the cityD) aggressive: hold a territory

Philosophy/Religion

This passage is adapted from G.K. Chesterton's "In the Place de la Bastille," in Tremendous Trifles, first published in 1909.

- On the first of May, I was sitting outside a café in the Place de la Bastille in Paris staring at the exultant column, crowned with a capering figure, which stands in the place where the people destroyed a prison and ended an age. The thing is a curious example of how symbolic is the great part of human history. As a matter of mere material fact, the Bastille when it was taken was not a horrible prison; it was hardly a prison at all. But it was a symbol, and the people always go by a sure instinct for symbols. No; the people are sometimes wrong on the practical side of politics; they are never wrong on the artistic side.
- ¶2 So it was, certainly, with the Bastille. The destruction of the Bastille was not a reform; it was something more important than a reform. It was an iconoclasm; it was the breaking of a stone image. The people saw the building like a giant looking at them with a score of eyes, and they struck at it as at a carved fact. For of all the shapes in which that immense illusion called materialism can terrify the soul, perhaps the most oppressive are big buildings. Man feels like a fly, an accident, in the thing he has himself made. It requires a violent effort of the spirit to remember that man made this confounding thing and man could unmake it.
- Therefore the mere act of the ragged people in the street taking and destroying a huge public building has a spiritual, a ritual meaning far beyond its immediate political results. It is a religious service. If, for instance, the socialists were numerous or courageous enough to capture and smash up the Bank of England, you might argue for ever about the inutility of the act, and how it really did not touch the root of the economic problem in the correct manner. But mankind would never forget it. It would change the world.
- Architecture is a very good test of the true strength of a society, for the most valuable things in a human state are the irrevocable things—marriage, for instance. And architecture approaches nearer than any other art to being irrevocable, because it is so difficult to get rid of. You can tear a poem to pieces; it is only in moments of very sincere emotion that you tear a town hall to pieces. A building is akin to dogma; it is insolent, like a dogma. Whether or no it is permanent, it claims permanence like a dogma.
- ¶5 People ask why we have no typical architecture of the modern world, like impressionism in painting. Surely it is obviously because we have not enough dogmas; we cannot bear to see anything in the sky that is solid and enduring.

This passage has been excerpted and adapted from the original, including minor punctuation changes, spelling changes, and other modifications that have not substantially changed content or intent.

- 21. The passage opens with a brief
 - A) personal anecdote.
 - B) literary reference.
 - C) explanatory myth.
 - D) scientific aside.
- 22. Based on the passage, the author would likely agree that which of the following has the potential to change the world?
 - A) The passing of a new law in Parliament
 - B) The destruction of an abandoned old house
 - C) The burning of a powerful organization's empty headquarters
 - D) The reform of the nation's prison system
- 23. The passage suggests that the people who destroyed the Bastille did so primarily because
 - A) they were terrified of large buildings.
 - B) it represented something they despised.
 - C) they needed the land for a new structure.
 - D) it was an eyesore in the city.
- 24. Which lines in the passage best support the answer to the previous question?
 - A) Paragraph 2, Sentences 2 and 3 ("The destruction . . . image")
 - B) Paragraph 2, Sentences 4 and 5 ("The people . . . buildings")
 - C) Paragraph 2, Sentences 6 and 7 ("Man feels . . . it")
 - D) Paragraph 4, Sentences 1 and 2 ("Architecture is . . . of")
- 25. In Paragraph 2, Sentence 7, the phrase "violent effort" most closely means
 - A) destructive labor.
 - B) furious flight.
 - C) vicious job.
 - D) huge struggle.
- 26. The passage suggests that socialists view the Bank of England with
 - A) intense guilt.
 - B) violent hope.
 - C) great scorn.
 - D) waning passion.

- 27. The author states that architecture is a good test of what?
 - A) The strength of a society
 - B) The sturdiness of industry
 - C) The passion of the people
 - D) The state of the economy
- 28. The author states that the modern world has no typical architectural style because the modern world
 - A) cannot bear the cost to construct one.
 - B) focuses too much on poetry and painting.
 - C) favors impressionism over style.
 - D) fears and despises dogmas.
- 29. Paris: a city:: Bastille:
 - A) an ideal
 - B) a prison
 - C) a café
 - D) an image
- 30. acquaintanceship: marriage::
 - A) writing: reading
 - B) building: art
 - C) poetry: architecture
 - D) emotion: strength

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Turn the page for the next passage.

Historical/Founding Documents

Passage 1 is adapted from John Calvin's "The fanaticism which discards the Scripture, under the pretense of resorting to immediate revelations, subversive of every principle of piety," from Institutes of Christian Religion, first published in 1536.

Passage 2 is adapted from Jonathan Edwards's "A divine and supernatural light, immediately imparted to the soul by the spirit of God, shown to be both a scriptural and rational doctrine," first preached by Edwards around 1733.

Passage 1

- People who abandon the Scripture and imagine that they are somehow approaching closer to God must be considered not so much misled by error as triggered by frenzy. For there have recently arisen some unsteady men who, arrogantly pretending to be taught by the Spirit, reject all reading themselves, and scorn the simplicity of those who still attend to what they claim is the dead and killing letter.
- But I would ask them what spirit inspires and draws them to the point where they dare to reject the guidance of the Scripture. For, if they answer that it is the Spirit of Christ, how ridiculous is such a statement! I am sure they would agree that the apostles of Christ, and other believers in the early Church, were illuminated by that very Spirit. And yet not one of those apostles or early believers learned from that teaching to condemn the Divine word. Rather, they were filled with a higher respect for it, as their writings abundantly show.
- ¶3 How diabolical, then, is that madness which pretends that the use of Scripture is only fleeting and temporary!

Passage 2

- Our Lord asked his disciples who men said he was. They answered that some said he was John the Baptist, and some Elias, and others Jeremias, or one of the Prophets. When they had thus given an account of who others said he was, Christ asks them who they said he was. Simon Peter, whom we find always enthusiastic and forward, was the first to answer: he readily replied to the question, "Thou art Christ, the Son of the living God."
- Peter is declared blessed on this account. God, and he only, had revealed it to Peter. This is an evidence of his being blessed. First, it shows how particularly favored he was of God above others. Secondly, it shows his blessedness also, as it suggests that this knowledge is above any that flesh and blood can reveal.
- The origin of this knowledge is here declared: God is the author of it; flesh and blood had not revealed it. God is the author of all knowledge and understanding. He is the author of the knowledge that is obtained by human learning. He is the author of all moral prudence, and of the knowledge and skill that men have in their worldly business.

These passages have been excerpted and adapted from their originals, including minor punctuation changes, spelling changes, and other modifications that have not substantially changed content or intent.

- 31. The author of Passage 1 argues that Scripture is
 - A) flawed but important.
 - B) necessary and enduring.
 - C) fascinating but outdated.
 - D) fleeting and transitory.
- 32. Passage 1 is primarily
 - A) an argument.
 - B) a narrative.
 - C) an anecdote.
 - D) a study.
- 33. In Passage 1, Paragraph 1, Sentence 2, the author uses the phrase "dead and killing letter" in order to
 - A) establish the viewpoint of those who reject Scripture.
 - B) highlight the limits of the utility of various books of Scripture.
 - C) demonstrate the physical violence of those who abandon Scripture.
 - D) suggest that early members of the Church were responsible for destroying Scripture.
- 34. Passage 2 indicates that knowledge ultimately develops from
 - A) learning.
 - B) God.
 - C) discipleship.
 - D) belief.
- 35. Which lines in Passage 2 best support the answer to the previous question?
 - A) Paragraph 1, Sentence 1 ("Our Lord . . . was")
 - B) Paragraph 1, Sentence 2 ("They answered . . . Prophets")
 - C) Paragraph 2, Sentence 1 ("Peter is . . . account")
 - D) Paragraph 3, Sentence 2 ("God is . . . understanding")
- 36. In Passage 2, Paragraph 2, Sentence 4, the word "particularly" most closely means
 - A) certainly.
 - B) discretely.
 - C) especially.
 - D) surprisingly.

- 37. The authors of Passage 1 and Passage 2 would likely agree on which of the following?
 - A) God reveals all knowledge to humans in time.
 - B) Scripture is the only source of knowledge.
 - C) Human beings can receive divine knowledge.
 - D) The Spirit reveals knowledge once per century.
- 38. Which of the following is discussed in Passage 1 but not Passage 2?
 - A) Knowledge as revealed by the divine
 - B) The evolution of the medieval church
 - —G) Anecdotes about specific apostles
 - D) Conflicts within Christianity
- 39. The following analogy is based on Passage 1.

Scripture: guidance::

- A) Spirit: illumination
- B) respect: Divine
- C) Church: apostles
- D) reading: letter
- 40. The following analogy is based on Passage 2.

Simon Peter: disciple::

- A) apostles: God
- B) moral prudence: knowledge
- C) flesh: blood
- D) Elias: Jeremias

STOP

Do not go on to the next section until instructed to do so by the proctor.

You may use any remaining time to check your work on this section (Section I) only.

"Until I feared I would lose it, I never loved to read. One does not love breathing."

- Harper Lee



II

Section II: Grammar/Writing

Instructions:

You will have 40 minutes to complete Section II.

Read each of the 4 passages in this section and answer the corresponding questions (40 total) to the best of your ability. Each question will ask you to either correct an error or suggest an improvement in the passage. If no change is necessary, select the option "NO CHANGE."

Note: Most questions correspond to a numbered portion of the passage. In these questions, answer choices represent alternatives that could be substituted for the numbered portion. Select the best answer choice out of the given options.

II

Philosophy/Religion

This passage is adapted from Hilaire Belloc's "The French Revolution," first published in 1911.

The political theory upon which the revolution proceeded has, especially in this country, suffered ridicule as local, as ephemeral, and as flawed. [41] It is universal, it is eternal, and it is true.

It may be briefly stated thus: that a political community pretending to sovereignty—that is, pretending to a moral right of defending its existence against all other [42] <u>communities, derives the</u> civil and temporal authority of [43] <u>its'</u> laws not from its actual rulers, nor even from its judges, but from itself.

But the community cannot express authority unless it possesses *corporate initiative*: that is, unless the mass of its component units are able to combine for the purpose of a common expression, are [44] <u>conscience</u> of a common will, and have something in common which makes the community sovereign indeed.

It may be that this power of corporate initiative and of corresponding corporate expression is forbidden to men. [45] In that case, no way we can say a sovereign community exists. In that case "patriotism," "public opinion," "the genius of a people," are terms without meaning. But the human race in all times and in all places has agreed that such terms have meaning, and the conception that a community can so live, order, and be itself is a human conception as intrinsic to the nature of man as is his sense of right and wrong. It is much more intimately a part of that nature than are the common activities determining human life, such as nourishment, generation, or repose: nay, more intimate a part of man's nature than anything which [46] attach to the body.

This theory of political morals, though subject to a limitless degradation in practice, underlies the argument of every man who pretends to regard the conduct of the state as a business affecting the conscience of citizens. Every protest against tyranny and every rebuke [47] with foreign aggression relies upon this theory.

He that is most enamored of a system for the government of men, and who regards the sacramental function of an hereditary monarch (as in Russia), the organic character of a native oligarchy [48], the mechanical arrangement of election by majorities, or even in a crisis the intense conviction and therefore the intense activity and conclusive power of great crowds as salutary to the state, will invariably, if any one of these systems fail him in the achievement of what he desires for his country, fall back upon the doctrine of an ultimately sovereign community.

[49] He will complain that though an election has defeated his ideal system, true national tradition and true national sentiment were upon his side. If he defends the action of a native oligarchy against the leaders of the populace, he does so by an explanation (more or less explicit) that the oligarchy is more truly national, that is more truly communal, than the engineered expression of opinion of which the demagogues (as he will call them) have been the mouthpieces. Even in blaming men for criticizing or [50] restrain an hereditary monarch the adherent of that monarch will blame them upon the ground that their action is anti-national. And, in a word, no man pretending to sanity can challenge in matters temporal and civil the ultimate authority of whatever is felt to be (though with what difficulty is it not defined!) the general civic sense which builds up a state.

This passage has been excerpted and adapted from the original, including minor punctuation changes, spelling changes, and other modifications that have not substantially changed content or intent.

H

- 41. If the author were to add a transition here, changing punctuation as necessary in the sentence that follows, which of the following transitions could work?
 - A) On the contrary
 - B) Also
 - C) For instance
 - D) Deservedly
- 42. communities, derives the
 - A) NO CHANGE
 - B) communities—derives the
 - C) communities derives—the
 - D) communities derives, the
- 43. its'
 - A) NO CHANGE
 - B) it's
 - C) it
 - D) its
- 44. conscience
 - A) NO CHANGE
 - B) cautious
 - C) conscious
 - D) caustic
- 45. Which of the following choices best matches the tone of the passage?

In that case, no way we can say a sovereign community exists.

- A) NO CHANGE
- B) In that case, it's pretty ridiculous to say a sovereign community exists.
- C) In that case, I probably wouldn't say that a sovereign community exists, honestly.
- D) In that case, no such thing as a sovereign community can be said to exist.

46. attach

- A) NO CHANGE
- B) attaches
- C) attached
- D) attaching
- 47. with
 - A) NO CHANGE
 - B) of
 - C) for
 - D) beside
- 48. Here, the author wants to add a parenthetical that is parallel to "as in Russia" earlier in the sentence. Which phrase would make the most sense?
 - A) (which is unique)
 - B) (as in England)
 - C) (unknown to man)
 - D) (as in literature)
- 49. Which of the following choices represents the clearest and most concise way to convey all of the information in the sentence?

He will complain that though an election has defeated his ideal system, true national tradition and true national sentiment were upon his side.

- A) NO CHANGE
- B) He will complain, upon his side, that though an election has defeated his ideal system, yet true national tradition and true national sentiment.
- C) He will complain that on his side are his ideal system, national tradition, and true national sentiment.
- D) True tradition and national sentiment were upon his side, though he will complain an election has defeated his ideal system.
- 50. restrain
 - A) NO CHANGE
 - B) restrains
 - C) restrained
 - D) restraining

II

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Turn the page for the next passage.

П

Historical Profile

This passage is adapted from Mary Stoyell Simpson's The Child's Book of American Biography, first published in 1924.

When Dorothea was twelve, she went to live with her grandmother. There, Dorothea was taught [51] to sew and cook and knit and was sometimes punished if the tasks were not well done. But she went to school and was so quick at her lessons that in two years [52] she finally finished her introductory classes. She was only fourteen and rather small for her age, so she put on long dresses and piled her hair on top of her head with a high comb. She proved a good [53] teacher; and the children loved her and never disobeyed her.

After keeping this school for a year, she studied again in Boston until she was nineteen. Then she not only taught a day and boarding school in that city, but looked after her brothers and opened another school for poor children [54] who's parents could not afford to pay for their lessons. She took care of her grandmother's house, too.

By and by her health broke down, and she began to think that she could never work any more. [55] <u>But after a long rest in England</u>, she came back to America far greater than teaching or writing—she did something better, and she went through the whole country making prisons, jails, and asylums more comfortable. Up to the time of Dorothea Dix's interest, no one had seemed to bother his head about prisoners and insane people. Any kind of a place that had a lock and key was good enough for such to sleep in. [56] And what did it matter if a wicked man or an insane man was cold or hungry?

But it mattered very much to Dorothea Dix that human beings were being ill-treated, and she meant to start a reform. She talked with [57] senators governors, and presidents. She visited the places in each state where prisoners, the poor, and the insane were shut up. She talked kindly to these shut-ins, and she talked wrathfully to the men who ill-treated them. She made speeches before legislatures; she wrote articles for the papers and begged money from millionaires to build healthy almshouses and asylums.

For twelve years Miss Dix went through the United States in the interests of the deaf and dumb, the blind, and the insane. [58] <u>Before, she</u> went to Europe to rest. But she found the same suffering there as here. In no time she was busy again.

It was not long after her return to America before the Civil War broke out. She went straight to Washington and offered [59] <u>nursing</u> the soldiers without pay. As she was [60] <u>appraised</u> superintendent, she had all the nurses under her rule. She hired houses to keep supplies in, she bought an ambulance, she gave her time, strength, and fortune to her country. In the whole four years of the Civil War, Dorothea Dix never took a holiday. She was so interested in her work that often she forgot to eat her meals until reminded of them.

She has been called the most useful woman of America. That is a great name to earn.

This passage has been excerpted and adapted from the original, including minor punctuation changes, spelling changes, and other modifications that have not substantially changed content or intent.

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- 51. to sew and cook and knit
 - A) NO CHANGE
 - B) to sew and to cook and knit
 - C) to sew and cook and to knit
 - D) to sew and cook and knitting
- 52. she finally finished her introductory classes
 - A) NO CHANGE
 - B) she was the worst student in her class
 - C) she opened a school for little children
 - D) she left home and went away to boarding school ·
- 53. teacher; and
 - A) NO CHANGE
 - B) teacher, and
 - C) teacher and
 - D) teacher: and
- 54. who's
 - A) NO CHANGE
 - B) whose
 - C) who
 - D) whom
- 55. Which of the following choices represents the clearest and most concise way to convey all of the information in the sentence?

But after a long rest in England, she came back to America far greater than teaching or writing—she did something better, and she went through the whole country making prisons, jails, and asylums more comfortable.

- A) NO CHANGE
- B) But after she did something better, a long rest in England after she came back to America, and then went through the country making prisons, jails, and asylums more comfortable.
- C) But after a long rest in England, she came back to America and did something far greater than teaching or writing—she went through the whole country making prisons, jails, and asylums more comfortable.
- D) But after a long rest in England, after which she came back to America, she did something far greater than teaching or writing in the country to make it more comfortable, visiting prisons, jails, and asylums.

56. Which of the following choices best matches the tone of the passage?

And what did it matter if a wicked man or an insane man was cold or hungry?

- A) NO CHANGE
- B) And who really cared about wicked and insane folks being chilly or hungry?
- C) And what was the consequence if a criminally liable man or a mentally ill man had a low body temperature or an empty stomach cavity?
- D) And do you really care about hungry, cold, wicked, insane men?
- 57. senators governors, and presidents
 - A) NO CHANGE
 - B) senators, governors, and presidents
 - C) senators governors and presidents
 - D) senators, governors and, presidents
- 58. Before, she
 - A) NO CHANGE
 - B) Afterwards, she
 - C) At the same time, she
 - D) As a result, she
- 59. nursing
 - A) NO CHANGE
 - B) nurse
 - C) nursed
 - D) to nurse
- 60. appraised
 - A) NO CHANGE
 - B) appointed
 - C) applauded
 - D) apprehended

 \mathbf{II}

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Turn the page for the next passage.

H

Science

This passage is adapted from Albert Einstein's "How I created the theory of relativity," a translation of Einstein's 1922 lecture given in Kyoto, Japan, with the permission of the American Institute of Physics. © 1982 AIP Publishing.

It is not easy to talk about how I reached the idea of the theory of [61] relativity, there were so many hidden complexities to motivate my thought, and the impact of each thought was different at different stages in the development of the idea. I will not mention them all here. [62] And no way am I counting the papers I have written on this subject. Instead I will briefly describe the development [63] from my thought directly connected with this problem.

It was more than seventeen years ago that I had an idea of developing the theory of relativity for the first time. [64] Naturally I cannot say exactly where that thought came from, I am certain that it was contained in the problem of the optical properties of moving bodies. Light travels through the sea of ether, in which the Earth is moving. In other words, the ether is moving with respect to the Earth. I tried to find clear experimental evidence for the flow of the ether in the literature of [65] physics, but in vain.

Then I myself wanted to verify the flow of the ether with respect to the Earth. When I first thought about [66] this problems, I did not doubt the existence of the ether or the motion of the Earth through it. I thought of the following experiment: set up mirrors so that the light from a single source is reflected in two different directions, [67] one parallel to the motion of the Earth and the other being antiparallel. If we assume that there is an energy difference between the two reflected beams, we can measure the difference in the [68] generational heat. Although the idea of this experiment is very similar to that of Michelson, I did not put this experiment to the test.

While I was thinking of this problem in my student years, I came to know the strange result of Michelson's experiment. Soon I came to the conclusion that our idea about the motion of the Earth with respect to the ether is incorrect, if we admit Michelson's result as a fact. [69] That was the first path that led me first to the special theory of relativity initially. Since then I [70] had come to believe that the motion of the Earth cannot be detected by any optical experiment, though the Earth is revolving around the Sun.

¹ Michelson's experiment looked at the speed of light in different directions in the ether, and found no difference. The results suggested reigning theories about ether were incorrect.

This passage has been excerpted and adapted from the original, including minor punctuation changes, spelling changes, and other modifications that have not substantially changed content or intent.

- 61. relativity, there were so many hidden complexities to motivate my thought, and the
 - A) NO CHANGE
 - B) relativity; there were so many hidden complexities to motivate my thought, and the
 - C) relativity, there were so many hidden complexities to motivate my thought; and the
 - D) relativity, there were so many hidden complexities to motivate my thought and the
- 62. Which of the following choices best matches the tone of the passage?

And no way am I counting the papers I have written on this subject.

- A) NO CHANGE
- B) And don't you think for a minute that I'm about to count the papers I've written on this subject.
- C) Also, I'm totally not going to count the papers I have written on this subject.
- D) Nor will I count the papers I have written on this subject.
- 63. from
 - A) NO CHANGE
 - B) by
 - C) of
 - D) to
- 64. Naturally
 - A) NO CHANGE
 - B) And
 - C) While
 - D) Given
- 65. physics
 - A) NO CHANGE
 - B) classic philosophy
 - C) romance writers
 - D) mathematics
- 66. this problems
 - A) NO CHANGE
 - B) this problem
 - C) these problem
 - D) those problem

H

- 67. one parallel to the motion of the Earth and the other being antiparallel.
 - A) NO CHANGE
 - B) one being parallel to the motion of the Earth and the other is antiparallel.
 - C) one being parallel to the motion of the Earth and then the other is antiparallel.
 - D) one parallel to the motion of the Earth and the other antiparallel.
- 68. generational
 - A) NO CHANGE
 - B) generated
 - C) generous
 - D) generic
- 69. Which of the following choices represents the clearest and most concise way to convey all of the information in the sentence?

That was the first path that led me first to the special theory of relativity initially.

- A) NO CHANGE
- B) That was, firstly, the first path that led me to the special theory of relativity.
- C) That was the first path that led me to the special theory of relativity.
- D) That was the path that led me initially to the special theory of relativity first.
- 70. had come
 - A) NO CHANGE
 - B) have come
 - C) had came
 - D) have came

 \mathbf{II}

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Turn the page for the next passage.

II

Modern/Influential Thinkers

This passage is adapted from W. E. B. Du Bois's "Niagara Movement Speech," delivered in 1905. The Niagara Movement was a civil rights movement that called for opposition to racial segregation and advocated for voting rights for black citizens.

Step by step, the [71] <u>defenders</u>' of the rights of American citizens have retreated. The work of stealing the black man's ballot has progressed. Discrimination in travel and public accommodation [72] <u>had</u> spread.

Against this the Niagara Movement eternally protests. We will not be satisfied to take one jot less than our full manhood rights. We claim for ourselves every single right that belongs to a freeborn American—[73] political, civil, and social—and until we get these rights we will never stop protesting.

The battle we wage is not for ourselves alone, but for all true Americans. It is a fight for ideals, lest this, our common fatherland, become the [74] <u>home of the citizen</u> and the home of the slave. Never before in the modern age has a great and civilized folk threatened to adopt so cowardly a creed in the treatment of its fellow citizens born and bred on its soil.

[75] <u>In detail our demands are clear.</u> First, we want to vote. Second, we want discrimination in public accommodation to stop. Separation in railway and street cars, based simply on race and color, is un-American, un-democratic, and silly. We protest against all such discrimination.

Third, we claim the right of freemen to walk, talk, and be with them that wish to be with us. [76] No man has a right to choose another man's friends, and to attempt to choose another man's friends for him is a rude interference with the most fundamental human privilege.

Fourth, we want the laws enforced against rich as well as poor, against capitalist as well as laborer, against white as well as black. We are not more lawless than the white race, [77] <u>and</u> we are more often arrested, convicted, and mobbed. We want the Constitution of the country [78] <u>infracted</u>.

Fifth, we want our children educated. And when we call for education, we mean real education. We believe in work. We ourselves are workers, but work is not necessarily education. Education is the development of power and ideal. We want our children trained as intelligent human beings should be, and we will fight for all time against any proposal to educate black boys and girls simply as servants and underlings, or simply for the use of other people. They have a right [79] knowing, thinking, to aspire.

These are some of the chief things which we want. How shall we get [80] it? By voting where we may vote, by hammering at the truth, and by sacrifice and work.

This passage has been excerpted and adapted from the original, including minor punctuation changes, spelling changes, and other modifications that have not substantially changed content or intent.

H

71. defenders'

- A) NO CHANGE
- B) defender's
- C) defenders's
- D) defenders

72. had

- A) NO CHANGE
- B) has
- C) have
- D) will have

73. political, civil, and social

- A) NO CHANGE
- B) political; civil, and social
- C) political, civil; and social
- D) political civil and social

74. home of the citizen

- A) NO CHANGE
- B) place of the country
- C) land of the thief
- D) country of the free

75. Which of the following choices best matches the tone of the passage?

In detail our demands are clear.

- A) NO CHANGE
- B) Listen up, we can't be clearer about our demands and their details.
- C) Well, we can't be clearer about our demands and their details, can we?
- D) In their details, our demands are one hundred percent totally clear.

H

76. Which of the following choices represents the clearest and most concise way to convey all of the information in the sentence?

No man has a right to choose another man's friends, and to attempt to choose another man's friends for him is a rude interference with the most fundamental human privilege.

- A) NO CHANGE
- B) No man has a right to choose another man's friends, and to attempt to do so is a rude interference with the most fundamental human privilege.
- C) No man has a right to attempt to choose another man's friends and make a rude interference with the most fundamental human privilege.
- D) No man has a right to choose and attempt to choose another man's friends, since to do so is a rude interference with the most fundamental human privilege.

77. and

- A) NO CHANGE
- B) but
- C) so
- D) thus

78. infracted

- A) NO CHANGE
- B) enforced
- C) enfeebled
- D) inflected
- 79. knowing, thinking, to aspire.
 - A) NO CHANGE
 - B) knowing, to think, aspire.
 - C) to know, think, aspiring.
 - D) to know, to think, to aspire.

80. it

- A) NO CHANGE
- B) them
- C) him
- D) us

STOP

Do not go on to the next section until instructed to do so by the proctor.

You may use any remaining time to check your work on this section (Section II) only.

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"Tradition is not the worship of ashes but the preservation of fire."

- Gustav Mahler

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Section III: Quantitative Reasoning

Instructions:

You will have 50 minutes to complete Section III. Answer each of the questions (40 total) to the best of your ability. You may not use a calculator for the math portion of this exam. Keep in mind that accompanying figures are NOT necessarily drawn to scale. You may use any of the following formulas to help you in your calculations.



Math Formulas:

Area of a circle = π^2 , where r is the radius of the circle

Circumference of a circle = 2m; where r is the radius of the circle

There are 360 degrees in a circle.

There are 2π radians in a circle.

Volume of a sphere = $\frac{4}{3}\pi r^3$, where r is the radius of the sphere

Surface area of a sphere = $4\pi^2$, where r is the radius of the sphere

Area of a rectangle = $length \times width$

Area of a triangle = $\frac{1}{2}$ (base × height)

The sum of the measures of the interior angles of a triangle is 180°.

Pythagorean theorem (for a right triangle): If a, b, and c are the side lengths of the triangle, and c is the hypotenuse, then $a^2 + b^2 = c^2$.

 $30^{\circ}-60^{\circ}-90^{\circ}$ triangles have side lengths in a ratio of 1: $\sqrt{3}$:2, corresponding to their angle.

 $45^{\circ}-45^{\circ}-90^{\circ}$ triangles have side lengths in a ratio of 1: $1:\sqrt{2}$, corresponding to their angle.



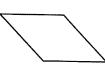
- 81. If x > -1, which of the following could be a value for x?
 - A) -3
 - B) -2
 - C) -1
 - D) 0
- 82. All tabby cats in Imagineville have white paws. A female cat in Imagineville has white paws. Which of the following must be true?
 - A) The female cat is also a tabby cat.
 - B) All female cats in Imagineville are tabby cats.
 - C) All tabby cats in Imagineville are female.
 - D) None of the above must be true.
- 83. Which two of the following shapes could be similar?



1



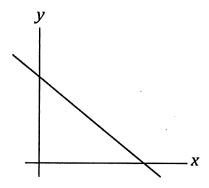
2



3



- A) 1 and 2
- B) 1 and 3
- C) 2 and 3
- D) 2 and 4
- 84. The line shown in the (x, y)-coordinate plane below has a slope that is which of the following?



- A) Zero
- B) Positive
- C) Negative
- D) Undefined



- 85. A rectangle has an area of 4 cm². Which of the following must be true?
 - A) The rectangle is also a square.
 - B) The rectangle has one side length that measures 2 cm.
 - C) The rectangle has a perimeter of 8 cm.
 - D) The rectangle has the same area as a triangle with a base of 8 cm and a height of 1 cm.
- 86. How many prime factors does the number 30 have?
 - A) 2
 - **B**) 3
 - C) 4
 - D) 5
- 87. The point (3, 10) in the (x, y)-coordinate plane is moved three units up and four units left. What are the coordinates of the resulting new point?
 - A) (-1, 13)
 - B) (6,6)
 - (6,14)
 - D) (7,13)
- 88. A moving truck can move 60 standard-size boxes in one trip. If the Weissman family has 230 standard-size boxes that they need to move from Point A to Point B, how many trips will they need to make with the moving truck from Point A to Point B in order to move all of the 230 boxes?
 - **A)** 3
 - B) 4
 - C) 5
 - D) 6
- 89. Which of the following lines is parallel to y = 5x 8?
 - A) y = 5x + 12
 - B) y = -5x 8
 - C) $y = \frac{1}{5}x 8$
 - D) $y = -\frac{1}{5}x + 4$



- 90. A young woman has three U.S. coins in her pocket that total more than 5 cents but less than 25 cents. Which of the following statements must be true? (Note: One penny is equal to 1 cent, one nickel is equal to 5 cents, and one dime is equal to 10 cents.)
 - I. The young woman has at least one dime.
 - II. The young woman has at least one penny.
 - III. The young woman does not have more than one of the same coin.
 - A) I only
 - B) III only
 - C) I and III only
 - D) None of the above must be true.
- 91. Which of the following is the value of b in the equation below?

$$4b - 64 = 132$$

- A) 17
- B) 26
- C) 38
- D) 49
- 92. What is the next term, x, in the following arithmetic sequence?

- A) -1
- B) 0
- C) 1
- D) 2
- 93. A student proposes the following rule:

All right triangles are also isosceles triangles.

Which of the following is a counterexample that disproves the above statement?

- A) A triangle with angles measuring 30°, 40°, and 110°
- B) A triangle with angles measuring 45°, 45°, and 90°
- C) A triangle with angles measuring 30°, 60°, and 90°
- D) A triangle with angles measuring 60°, 60°, and 60°



- 94. Square *X* has a side length of 4 cm and Square *Y* has a side length of 6 cm. What is the difference between the measure of the area of Square *X* and the measure of the area of Square *Y*?
 - A) 4 cm^2
 - B) 20 cm^2
 - C) 44 cm²
 - D) 48 cm^2
- 95. Michael's science class has 40% more students than his math class. If his math class has 15 students, how many students are in his science class?
 - A) 9 students
 - B) 19 students
 - C) 20 students
 - D) 21 students
- 96. What does the expression below simplify to?

$$(2^{7-4} \cdot 9 + 3^0) - 12$$

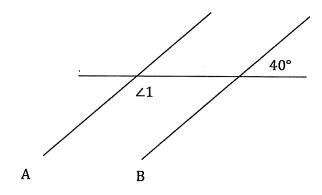
- A) 6
- B) 61
- C) 66
- D) 68
- 97. Which of the following is equivalent to $4(2-7)^2$?
 - A) -41
 - B) 1
 - C) 100
 - D) 400
- 98. A molecule of potassium bicarbonate contains one potassium atom, one hydrogen atom, one carbon atom, and three oxygen atoms. If a sample of potassium bicarbonate contains 150 oxygen atoms, how many potassium and hydrogen atoms COMBINED does that sample have?
 - A) 20
 - B) 40
 - C) 50
 - D) 100



99. A circle has a diameter of 8 cm. What is the circumference of the circle?

- A) 8π cm
- B) 16π cm
- C) 24π cm
- D) 64π cm

100. Lines A and B, shown below, are parallel. What is the $m \angle 1$?



- A) 40°
- B) 80°
- C) 120°
- D) 140°

101. What is the solution to the system of equations below?

$$y + x = 10$$
$$2y - x = 8$$

$$z_y = x =$$

- A) (8,2)
- B) (4,6)
- C) (5,2)
- D) (4,0)

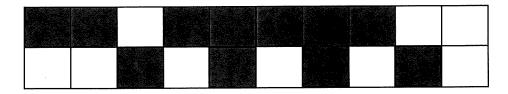


102. Sofia throws a baseball into the air. The ball's height can be calculated using the following equation:

$$h = -16s^2 + 32s$$

where s is the time in seconds after the ball is thrown and h is the height of the ball in feet after s seconds. After how many seconds will the ball hit the ground after Sofia throws it?

- A) 0 seconds
- B) $\frac{1}{2}$ second
- C) 2 seconds
- D) 4 seconds
- 103. A horticulturist is planting only fig trees and plum trees in an empty field. She decides to plant 200 trees, 50 of which are fig trees. Assuming all the trees planted survive and produce fruit, what is the probability that a randomly selected tree from those planted in the field is a plum tree?
 - A) $\frac{1}{4}$
 - B) $\frac{1}{2}$
 - C) $\frac{2}{3}$
 - D) $\frac{3}{4}$
- 104. A botanist is growing plants in the adjacent boxes, as represented below. The botanist plans to place spider plants, *Chlorophytum comosum*, in two of the boxes. Spider plants are highly invasive, so the botanist plans to put each spider plant in a box with the least number of shared sides possible in the configuration below. The botanist has already placed all other plants in the boxes. If the white (non-shaded) boxes below are still open, how many sides will the two spider plants share with other non-spider plants?



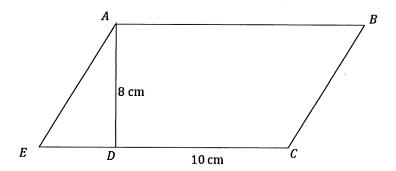
- A) 0 sides and 1 side
- B) 0 sides and 2 sides
- C) 1 side and 1 side
- D) 1 side and 2 sides



105. If -x is odd and positive, then 2x is which of the following?

- A) Odd and positive
- B) Even and positive
- C) Odd and negative
- D) Even and negative

106. In the parallelogram below, the area of $\triangle ADE$ is 24 cm², AD = 8 cm, and DC = 10 cm. What is the area of the entire parallelogram below?



- A) 80 cm^2
- B) 104 cm^2
- C) 128 cm^2
- D) 240 cm^2

107. How many integers between 1 and 50 (inclusive) meet both conditions below?

- 1. The integer shares at least one prime factor with 40.
- 2. The integer is odd.
 - A) 0
 - B) 1
 - C) 3
 - D) 5

108. An isosceles right triangle has a hypotenuse that measures $5\sqrt{2}$ in. Which of the following is FALSE?

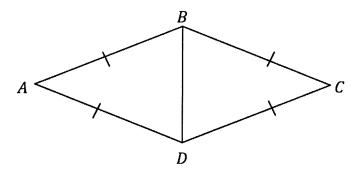
- A) The remaining two legs of the isosceles right triangle both measure 5 in.
- B) The triangle has two angles that measure 45°.
- C) The area of the triangle is 10 in².
- D) The sum of the interior angles of the triangle is 180°.



- 109. Which of the following is equivalent to $\frac{xyz^{-1}}{x^3z^3}$?
 - A) $\frac{y}{x^2z^4}$
 - B) $\frac{yz^4}{x^2}$
 - C) $\frac{yx^2}{z^4}$
 - D) x^4yz^4
- 110. Ten students in Mr. Romano's class play a varsity sport. Seven students in his class play an instrument. Three students in his class both play a varsity sport and volunteer at the local hospital, and no other students volunteer at the local hospital. If there are twenty students in his class in total, which of the following must be true?
 - A) No students both play an instrument and volunteer at the local hospital.
 - B) No students both play a varsity sport and play an instrument.
 - C) At least some students in the class do not take part in any of the three activities (playing a varsity sport, playing an instrument, and volunteering at the local hospital).
 - D) At least some students who volunteer at the local hospital also play an instrument.
- 111. If \blacksquare is defined such that $x \blacksquare y = |x^5| y$, then which of the following is equivalent to $-1 \blacksquare -5$?
 - A) -6
 - B) -4
 - C) 4
 - D) 6
- 112. In Mathlandia, twelve brass nuts are equivalent to one silver dollar. Four silver dollars are equivalent to one gold cube. If you have three pieces of Mathlandia currency in your pocket (each of which could either be a brass nut, silver dollar, or gold cube), what is the MAXIMUM amount of money that you could have, given in the value of brass nuts?
 - A) 36 brass nuts
 - B) 48 brass nuts
 - C) 144 brass nuts
 - D) 192 brass nuts



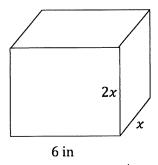
- 113. A scientist is managing the levels of Chemical X in a large cylindrical vat. Once the vat is full, she needs to place a circular metal cover on the vat that perfectly fits the top rim. If the cost per square inch of the metal cover was \$2.50, and the diameter of the metal cover is 1 foot, approximately how much did that metal cover cost? (Hint: $\pi \approx 3.14$)
 - A) Between \$5.00 and \$10.00
 - B) Between \$10.00 and \$20.00
 - C) Between \$100.00 and \$150.00
 - D) Between \$250.00 and \$300.00
- 114. Which of the following is equivalent to the expression $4x(2-x^2)$?
 - A) $8x x^2$
 - B) $8 4x^2$
 - C) $8x x^3$
 - D) $8x 4x^3$
- 115. $\triangle ABD$ and $\triangle CDB$ are congruent. If $m \angle A = 40^{\circ}$, then what is $m \angle CBD + m \angle BCD$?



- A) 40°
- B) 110°
- C) 140°
- D) There is not enough information to answer the question.
- 116. How many integers between 30 and 60 (inclusive) meet both conditions below?
 - 1. The integer is prime.
 - 2. The product of the integer's digits is a multiple of 3.
 - **A)** 0
 - B) 5
 - C) 7
 - D) 9



117. A Christmas package has a height twice the size of its width, and a length of 6 in, as shown below. If the length of the package is three times the size of the package's width, what is the volume of the package? (Note: The figure is not necessarily drawn to scale.)



- A) 12 in^3
- B) 36 in^3
- C) 48 in^3
- D) It is impossible to determine from the given information.
- 118. If x^3 is an odd integer, then which of the following must always be true?
 - A) $-x < x^2$
 - B) $|x^3| \ge x^2$ C) $x^2 < x^3$

 - D) $\sqrt[3]{x} > \sqrt[2]{x}$
- 119. The volume of a sphere is 36π cm³. What is the surface area of that sphere? ((Hint: The surface area of a sphere is given by the equation, Surface Area = $4\pi r^2$, where r is the radius of the sphere.)
 - A) 36π cm²
 - B) $64\pi \text{ cm}^2$
 - C) $144\pi \text{ cm}^2$
 - D) $324\pi \text{ cm}^2$
- 120. Suppose b, c, and d are all integers. $\sqrt{d} = b$ and 2b = c. Which of the following must be true?
 - A) d = c
 - B) c is positive.
 - C) b is even.
 - D) None of the above must be true.

III

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STOP

You have reached the end of the test.

You may use any remaining time to check your work on this section (Section III) only.

"Intelligence plus character—that is the true goal of education."

- Martin Luther King Jr.

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