SSAT Upper Level

Sample Test

Contents

INTRODUCTION

The SSAT Upper Level is used for admission purposes to independent schools all over the world, and is administered to students in grades 8-11, who are seeking admission to an independent school for grades 9-12. The SSAT Test assesses basic quantitative, verbal, and reading skills that students develop over time. These skills are necessary for a student to be successful at an independent school. The SSAT Upper Level provides useful information regarding the potential academic success of the students in question. Problem-solving skills and critical thinking are both emphasized on the SSAT Upper Level.

The test in front of you is a free SSAT sample test. This test is designed to give you an opportunity to practice relevant SSAT questions and to provide you with an idea of what the SSAT looks like.

This sample test is divided into three sections:

- The **Quantitative section**: comprised of five questions from various math topics. If you want to practice under a time limit – allow yourself 6 minutes to complete this section.
- The **Verbal section**: comprised of two parts – **synonyms** and **verbal analogies** – each containing three questions. If you want to practice under a time limit – allow yourself 3 minutes to complete the entire verbal section.
- The **Reading Comprehension section**: comprised of one reading passage followed by three questions. If you want to practice under a time limit – allow yourself 5 minutes to complete this section.

After you have answered all the questions in each section, you will be able to view the correct answers to the questions along with detailed explanations.

Good luck!

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QUESTIONS

Quantitative section

The following section contains five multiple-choice math problems. Choose the most accurate answer choice.

Question 1:

Four fractions are given: $\frac{4}{6}, \frac{6}{7}, \frac{1}{2}, \frac{1}{3}$. Which of the following lists the fractions in increasing order?
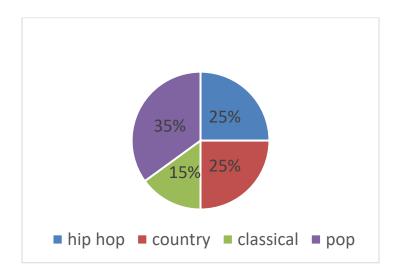
(A) $\frac{4}{6}, \frac{6}{7}, \frac{1}{2}, \frac{1}{3}$

(B) $\frac{1}{3}, \frac{4}{6}, \frac{6}{7}, \frac{1}{2}$

(C) $\frac{1}{3}, \frac{1}{2}, \frac{4}{6}, \frac{6}{7}$

(D) $\frac{1}{2}, \frac{4}{6}, \frac{1}{3}, \frac{6}{7}$

(E) $\frac{1}{2}, \frac{1}{3}, \frac{4}{6}, \frac{6}{7}$

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Question 2:

Rina asked the students in her class about their favorite music genre. The circle graph shows the music preferences of the students in Rina's class. What fraction of the students do not prefer classical music?

(A) $\frac{15}{100}$ (B) $\frac{7}{20}$ (C) $\frac{5}{10}$ (D) $\frac{17}{20}$ (E) $\frac{95}{100}$

Question 3:
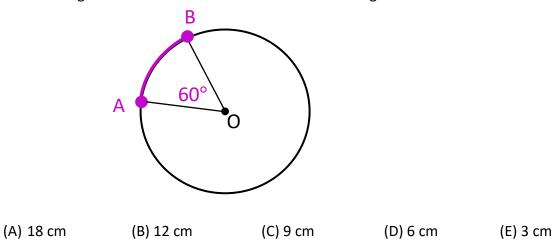
$$\frac{12f^3mg^2}{64m^2g} = \ ?$$

(A) $\frac{4f^3m}{16g}$ (B) $\frac{3f^3g}{16m}$ (C) $\frac{3fg}{4m}$ (D) $\frac{12f^3mg}{16}$ (E) $\frac{3f^3mg}{16mg}$

Question 4:

The circumference of the circle drawn below is 18 cm.

What is the length of arc *AB* if the measure of the central angle it subtends is 60°?

(A) 18 cm   (B) 12 cm   (C) 9 cm   (D) 6 cm   (E) 3 cm

Question 5:

Jonathan walks at a varying rate of 400 to 600 meters per hour. The distance, in kilometers, Jonathan walked in two hours and 30 minutes must have been between

(A) 1 and 1.5   (B) 1.5 and 3   (C) 30 and 45   (D) 450 and 600   (E) 750 and 1500

Verbal section

Part One — Synonyms

Each of the following questions consists of one word written in capital letters, followed by five words or phrases. Your aim is to select the answer that is closest in meaning to the word in capital letters.

Question 1

                                    ECCENTRIC

(A) peculiar   (B) eerie   (C) elderly   (D) jolly   (E) hungry

Question 2

                                    DWELLING

(A) gloating   (B) welfare   (C) battle   (D) abode   (E) dilemma

Question 3

                                    PREVALENT

(A) desired   (B) common   (C) accessible   (D) humane   (E) full

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Part Two — Analogies

Each of the following questions asks you to find the relationships between words. For each question, select the answer choice that best completes the meaning of the sentence.

Question 4

Oscillate is to swing as

(A) calculate is to estimate   (B) rotate is to digress   (C) interpret is to decipher

(D) tolerate is to refuse   (E) percolate is to boil

Question 5

Tirade is to speech as

(A) walk is to hike   (B) lecture is to lesson   (C) uproar is to protest

(D) laughter is to gloom   (E) void is to space

Question 6

Pound is to weight as

(A) watt is to length   (B) gram is to liquid   (C) grain is to wheat

(D) second is to time   (E) volume is to gallon

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Reading Comprehension

Read the following passage and answer the subsequent questions:

****

A hot air balloon consists of a fabric bag called an envelope, usually made of ripstop nylon or Dacron. To make it impermeable to air, the fabric is coated with a sealer such as silicone or polyurethane. The envelope is filled with a gas warmer than the surrounding atmosphere, making it less dense than the relatively cold air outside and giving the balloon buoyancy.

Attached underneath the envelope is a gondola or basket that carries passengers and a source of heat, like a burner. The burner gasifies liquid propane,https://en.wikipedia.org/wiki/Hot_air_balloon mixes it with air, and ignites the mixture, directing the exhaust into the envelope. For typical atmospheric conditions (20°C, 68°F), a balloon heated to 99°C (or 210°F) requires about 3.91 m³ of envelope volume to lift 1 kilogram (62.5 ft³/lb).

As with all aircraft, hot air balloons cannot fly beyond the atmosphere. Some directional control is possible by making the balloon rise or sink in altitude to find favorable wind directions.

Question 1

The primary purpose of the passage is to

(A) describe the production of a hot air balloon
(B) survey the structure of a balloon's envelope
(C) explain the physics of a hot air balloon
(D) guide how to fly a hot air balloon
(E) review the history of aviation

Question 2

It can be inferred from the passage that a source of heat must be taken along in the balloon because

(A) it enables the balloon to fly beyond the atmosphere

(B) the gas that fills the envelope gradually leaks out

(C) it helps maneuver the balloon by affecting the wind

(D) the gas in the balloon's envelope cools over time

(E) it ensures the gondola is fastened to the envelope

Question 3

Which of the following is probably true of the hot air balloon?

(A) Different weather conditions require heating the balloon to different temperatures.

(B) A hot air balloon can fly while air flows through its envelope's fabric.

(C) The pilot of the hot air balloon is unable to steer the balloon at all.

(D) The gas in the balloon must be denser than the air around it for the balloon to float.

(E) The envelope of hot air balloons is always made of either ripstop nylon or Dacron.

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ANSWERS AND EXPLANATIONS

Quantitative section

Question 1

The correct answer is (C).

To solve this problem, find the common denominator for all fractions. The least common denominator is 42. Change the fractions so that they have a denominator of 42:

$$\frac{4}{6} \times \frac{7}{7} = \frac{28}{42}$$

$$\frac{6}{7} \times \frac{6}{6} = \frac{36}{42}$$

$$\frac{1}{2} \times \frac{21}{21} = \frac{21}{42}$$

$$\frac{1}{3} \times \frac{14}{14} = \frac{14}{42}$$

Next, since the fractions now all have the same denominator, you can order their numerators in increasing order: $\frac{14}{42} < \frac{21}{42} < \frac{28}{42} < \frac{36}{42}$. Convert the fractions back to their original from. The result is: $\frac{1}{3}, \frac{1}{2}, \frac{4}{6}, \frac{6}{7}$, and the correct answer is (C).

Solving tip: try to eliminate answers by comparing between fractions you know well. For example, you know that $\frac{1}{3} < \frac{1}{2}$. Thus, answers (A), (D), and (E) can be eliminated.

Question 2

The correct answer is (D).

To solve this problem, find the percentage of students who prefer classical music and subtract that number from 100%. In the circle graph given, the grey section represents the desired information. Thus, one can see that 15% of the students like classical music best, and 100% − 15% = 85% do not prefer classical music.

Convert 85% to fractions:

$85\% = \frac{85}{100} = \frac{85 \div 5}{100 \div 5} = \frac{17}{20}$. Thus, the correct answer is (D).

Question 3

The correct answer is (B).

To solve this problem, reduce the expression to its simplest form. Since there is only multiplication in both the numerator and the denominator, you can reduce like terms:

$\frac{12}{64} = \frac{3}{16}$ (when dividing both the numerator and the denominator by 4).

$\frac{m}{m^2} = \frac{1}{m}$ (when dividing the numerator and the denominator by m).

$$\frac{g^2}{g} = \frac{g}{1}$$

Overall, one may conclude that: $\frac{\cancel{12}f^3mg^2}{\cancel{64}m^2g} = \frac{3f^3\cancel{m}g^2}{16\cancel{m^2}g} = \frac{3f^3\cancel{g^2}}{16mg} = \frac{3f^3g}{16m}$, and the correct answer is (B).

Question 4

The correct answer is (E).

To solve this problem, you need to know the relationship between an arc on a circle and the central angle it subtends. **The length of an arc is a portion of the circumference**. The degree measure of an arc is equal to the measure of the central angle that intercepts the arc. You

know that a full angle is 360° and that 60° is equal to $\frac{1}{6}$ of the full angle (because $\frac{60°}{360°} = \frac{1}{6}$).

Thus, the **length of the marked arc AB is equal to $\frac{1}{6}$ the circumference of the circle**. The

circumference of the circle is 18 cm; thus, the length of arc AB is $\frac{1}{6} \times 18$ cm $= \frac{18}{6}$ cm $= 3$

cm, and the correct answer is (E).

Question 5

The correct answer is (A).

In this problem, since Jonathan doesn't walk at a constant speed, the distance he walks is a range. Find the maximum and minimum distances Jonathan could have walked.

The minimum distance was gained if Jonathan walked for two and a half hours at a rate of 400 meters per hour.

2.5 hours × 400 mph = 1000 meters. Since 1000 meters = 1 kilometer, the minimum distance Jonathan walked is 1 kilometer. The only answer choice that has one kilometer as a lower bound is (A), and thus the correct answer is (A).

The maximum distance was gained if Jonathan walked for two and a half hours at a rate of 600 meters per hour.

2.5 hours × 600 mph = 1500 meters. Since 1500 meters = 1.5 kilometers, the maximum distance Jonathan walked is 1.5 kilometers. Therefore, the distance Jonathan walked must have been between 1 kilometer and 1.5 kilometers.

 If you are looking for practice questions and detailed explanations, click here.

Verbal section

Question 1

The correct answer is (A) — peculiar.

Eccentric refers to "someone or something unusual or bizarre." Answer (B), eerie, means "spooky." Though someone or something eccentric might also be spooky, not everyone or everything eccentric is spooky. Therefore, this is not the best answer. Answer (C), elderly, means "of advanced age." Answer (D), jolly, means "cheerful." Answer (E), hungry, is unrelated to being unusual. Answer (A), peculiar, means "unique" or "strange." It is the closest in meaning to eccentric, and is therefore the correct answer.

Question 2

The correct answer is (D) — abode.

Dwelling is a noun that means "home, a place of residence." Answer (A), gloating, means "showing improper happiness at the failure of others." Answer (B), welfare, means "well-being" or "financial assistance." Answer (C), battle, is a distracting answer choice since it is a synonym for 'dueling,' which could be confused with dwelling. Answer (E), dilemma, means "a situation requiring a choice between equally undesirable alternatives." Answer (D), abode, means "a place in which a person lives." It is the closest in meaning to dwelling, and is therefore the correct answer.

Question 3

The correct answer is (B) — common.

Prevalent is an adjective with two meanings: "common or widespread" and "dominant." Answer (A), desired, means "yearned for." Answer (C), accessible, means "easy to approach, attain, or enter." Answer (D), humane, means "characterized by tenderness, compassion, and sympathy for people and/or animals." Answer (E), full, is unrelated to how widespread

something is. Answer (B), common, matches one of the two meanings of prevalent, and is therefore the correct answer.

Part Two — Analogies

Question 4

The correct answer is (C), interpret is to decipher.

Oscillate and swing are synonyms (meaning "to move back and forth"), as are decipher and interpret (meaning "to figure out".) Answer (A), calculate is to estimate, is incorrect because to calculate is "to determine the exact value" and estimate is "to form an approximate opinion." Answer (B), rotate is to digress, is incorrect because rotate means "to go around in a circle" and digress means "to stray." Answer (D), tolerate is to refuse, is incorrect because the two are antonyms. Answer (E), percolate is to boil, is incorrect because the two are not close in meaning. Percolate means "to filter."

Question 5

The correct answer is (C), uproar is to protest.

Tirade is an angry, intense speech like uproar is an angry, intense protest. Answer (A), walk is to hike, is incorrect because a walk is not an angry, intense hike. Answer (B), lecture is to lesson, is incorrect because the two are synonyms. Answer (D), laughter is to gloom, is incorrect because laughter is not angry gloom. Answer (E), void is to space, is incorrect because void is not an angry, intense space; it is an empty space.

Question 6

The correct answer is (D) second is to time.

A pound is a unit that measures weight, just as a second is a unit that measures time. Answer (A), watt is to length, is incorrect because a watt is a unit that measures electric power, not length. Answer (B), gram is to liquid, is incorrect because a gram is a measure of weight, not liquid. Answer (C), grain is to wheat, is incorrect because a grain is the seed of

wheat, not a unit that measures it. Answer (E), volume is to gallon, is incorrect because the words appear in the wrong order: a gallon is a unit that measures volume.

Reading Comprehension

Question 1

The correct answer is (C).

Answer (C) is the best answer because the passage describes the elements that allow the balloon to fly as well as how they operate.

Answer (A) is incorrect because while the passage offers some information about the materials the balloon is made of, it does not describe how the balloon is manufactured.

Answer (B) is incorrect because the envelope is not the only focus of the passage. In addition, the passage surveys the **materials** the envelope is made of, not the envelope's **structure**.

Answer (D) is incorrect because the passage does not provide instructions for flying a balloon.

Answer (E) is incorrect because the passage provides no historical data.

Question 2

The correct answer is (D).

Answer (D) is the best answer because the passage tells us that what gives the balloon buoyancy is that it is lighter than the cold atmosphere surrounding it due to the hot gas that fills it (lines 3-5). For the balloon to continue flying, the gas in it must stay hot, so it can be inferred that there is a need to bring a source of heat to keep the gas hot.

Answer (A) is incorrect because the passage tells us that the balloon cannot fly beyond the atmosphere at all (line 11).

Answer (B) is incorrect because there is no support for this in the passage.

Answer (C) is incorrect because the paragraph does not mention affecting the wind, only finding favorable wind directions: "Some directional control is possible by making the balloon rise or sink in altitude to find favorable wind directions" (lines 11-13).

Answer (E) is incorrect because there is no support for this in the passage.

Question 3

The correct answer is (A).
Answer (A) is the best answer because the passage says, "For typical atmospheric conditions (20°C, 68°F), a balloon heated to 99°C (or 210°F) requires about 3.91 m³ of envelope volume to lift 1 kilogram (62.5 ft³/lb)" lines (8-10). The reference to the specific degree of heat required for a specific degree in the atmosphere indicates that a change in one will affect the other.

Answer (B) is incorrect because the envelope is coated with a sealer "To make it impermeable to air" (line 2).

Answer (C) is incorrect because "Some directional control is possible by making the balloon rise or sink in altitude to find favorable wind directions" (lines 11-13).

Answer (D) is incorrect because the opposite is true: "The envelope is filled with a gas warmer than the surrounding atmosphere, making it **less dense** than the relatively cold air outside and giving the balloon buoyancy" (lines 3-5).

Answer (E) is incorrect because the passage says the envelope is "**usually** made of ripstop nylon or Dacron" (lines 1-2).

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