DECONSTRUCTION: MARCH 2021 U.S. SAT

Section 1: Reading Test

SUCCESS ON THE SAT READING TEST REQUIRES THE TEST-TAKER TO BECOME ACQUAINTED WITH VARIOUS SAT READING TEST GUIDELINES. FOR A SUMMARY OF THESE GUIDELINES, PLEASE REFER TO SAM'S COMPRESSED SAT/ACT READING DOCUMENT, LOCATED IN THE FREE RESOURCES SECTION OF COLLEGE CONNECTION'S WEBSITE. FOR MORE COMPREHENSIVE ASSISTANCE ON THE SAT READING TEST, PLEASE REFER TO SAM'S EXHAUSTIVE SAT READING TEST DOCUMENT, LOCATED IN THE PAID RESOURCES SECTION OF COLLEGE CONNECTION'S WEBSITE.

The Reading Test is divided into five passages. The first passage is Literature; the second and third passages are "soft science": psychology, law, sociology; the fourth

passage is historical, and the last passage is Natural Science.

Most test-takers are given 65 minutes to complete Section 1, but, for those test-takers receiving an accommodation, they can receive time and a half, or more time, with which to complete the test. With time and a half, the test-taker has 98 minutes to complete Section 1. With 65 minutes, the test-taker would spend roughly 13 minutes per reading passage; whereas, with 98 minutes, the test-taker would spend roughly 20 minutes per passage.

HOWEVER, THE SAT REWARDS FLEXIBLE TEST-TAKERS, PUNISHING RIGID TEST-TAKERS. THIS MEANS THAT THE CONSCIENTIOUS TEST-TAKER SHOULD ALWAYS INDIVIDUALIZE TEST 1 BY SPENDING LESS TIME ON EASIER READING PASSAGES AND MORE TIME ON HARDER READING PASSAGES, ALSO, THE TEST-TAKER SHOULD GO THROUGH THE PASSAGES ACCORDING TO THE TEST-TAKER'S INDIVIDUAL PREDILECTIONS—FROM EASIER TO HARDER READING PASSAGES.

No matter how many minutes the test-taker has, all test-takers should spend roughly one-third of the time reading the passages, noting important shifts throughout the passages. In this regard, adopt a 'Goldilocks Approach,' meaning that some students underline too much of the

passages; other students, underline nothing, or too little of the reading passages. The correct approach is to underline important turning points in the reading passages. Finally, you are NOT trying to memorize the reading passages; you are simply trying to get a "sense" of what transpired in the reading passage, such that you could explain what went on in the reading passage to someone who has never seen the reading passage.

Always read the italicized introduction to the reading passages; they provide context for the reading passages.

IN ORDER TO PROSPER ON THE SAT READING TEST (Test 1), MAKE SURE ALL YOUR ANSWERS ON THE TEST: A) ANSWER THE EXPLICIT QUESTION ASKED; AND, B) HAVE TEXTUAL SUPPORT.

YOU ARE NEVER LOOKING FOR THE BEST ANSWER; YOU ARE ALWAYS LOOKING FOR THE RIGHT ANSWER: THE ANSWER THAT ANSWERS THE PRECISE QUESTION ASKED AND HAS TEXTUAL SUPPORT. THIS MEANS THAT THE EFFECTIVE TEST-TAKER NEEDS TO BE ABLE TO POINT TO SPECIFIC LANGUAGE FROM THE PASSAGE THAT DIRECTLY SUPPORTS THE TEST-TAKER'S CHOSEN ANSWER. EVEN WHERE THE QUESTION SAYS "IMPLIED" "INFERRED" OR "ASSUMED" THE TEST-TAKER STILL NEEDS TO POINT TO SPECIFIC LANGUAGE FROM THE READING

PASSAGE FROM WHICH THE TEST-TAKER CAN IMPLY, INFER OR ASSUME THE CORRECT ANSWER.

THIS ALSO MEANS THE EFFECTIVE TEST-TAKER WILL NEVER GET TO THE CORRECT ANSWER BY COMPARING THE ANSWER CHOICES, ONE AGAINST THE OTHER, BECAUSE, SOMETIMES THE BEST SOUNDING ANSWER IS THE WRONG ANSWER. WHY? BECAUSE THAT GREAT ANSWER IS NOT SUPPORTED BY THE EXPRESS WORDS OF THE TEXT.

THIS IS WHY EVEN AN ANSWER THAT DOES HAVE TEXTUAL SUPPORT CAN BE WRONG BECAUSE EVEN THOUGH THAT ANSWER COMES FROM THE READING PASSAGE, THE ANSWER DOES NOT ANSWER THE PRECISE QUESTION ASKED.

THIS IS WHY THE EFFECTIVE TEST-TAKER MUST PAY CLOSE ATTENTION TO EVERY WORD CONTAINED IN THE TEST QUESTION AND IN THE ANSWER CHOICES, ESPECIALLY SMALL, EASILY IGNORED, WORDS, BECAUSE, IF THE TEST-MAKER CHANGES ONE WORD IN THE QUESTION OR IN THE ANSWER CHOICE, THE CORRECT ANSWER CAN CHANGE.

THIS IS ALSO WHY MAYBE ANSWERS AND ANSWERS YOU KNOW TO BE TRUE FROM YOUR OUTSIDE KNOWLEDGE ARE ALWAYS WRONG ANSWERS AS WELL.

FOR THOSE BRILLIANT TEST-TAKERS WHO LOVE TO ANALYZE AND INTERPRET, I HAVE ONE WORD FOR YOU: DON'T! WHY? BECAUSE YOU ARE NOT THE AUTHOR/NARRATOR OF THE PASSAGE. AS SUCH, YOUR VIEWS, INTERPRETATIONS AND ANALYSES OF THE READING PASSAGES ARE COMPLETELY IRRELEVANT. THE ONLY RELEVANT ISSUE HERE IS ALWAYS WHAT THE NARRATOR/AUTHOR THINKS ABOUT THE ISSUE; WHAT THE NARRATOR/ AUTHOR SAYS ON THE MATTER AS EVIDENCED BY THE WORDS THE NARRATOR/AUTHOR USED IN THE READING PASSAGE, PERIOD.

AND, FINALLY, YOU MUST REMEMBER THAT THE SAT IS CONSTANTLY ATTEMPTING TO CHALLENGE THE TEST-TAKER IN ANY MYRIAD OF WAYS. TO GET AROUND SUCH SAT TRICKS AND TRAPS, WHEREVER FEASIBLE, THE TEST-TAKER SHOULD CONVERT THE DELIBERATELY CONFUSING LANGUAGE (TRYING TO PROVE A NEGATIVE, ETC.) USED BY THE TEST-MAKER INTO MORE ACCESSIBLE LANGUAGE BY SUBSTITUTING THE TEST-TAKER'S OWN WORDS IN PLACE OF THE TEST-MAKER'S WILLFULLY CONFUSING WORDS ON ALL THE SECTIONS OF THE SAT, EVEN INCLUDING THE TWO MATH SECTIONS OF THE SAT, WITH ONE IMPORTANT CAVEAT: THE TEST-TAKER CAN NEVER CHANGE THE MEANING OF THE WORDS OF THE TEST QUESTIONS OR ANSWER

CHOICES, THE TEST-TAKER CAN ONLY PARAPHRASE OR RE-PHRASE THE WORDS BY USING THE TEST-TAKER'S OWN WORDS IN PLACE OF THE WORDS USED BY THE SAT TEST-MAKER.

KNOWING ALL THIS, LET US NOW MOVE TO THE THOROUGH DECONSTRUCTION OF THE MARCH 2021 U.S. SAT TEST:

PASSAGE ONE: “LITERATURE PASSAGE”

All Literature passages tell a story. A story that the test-taker does not control. Analytical, logical, left-side of the brain test-takers must learn to “let go” while reading a Literature passage because for those who prefer an ordered world, the Literature passage can take you anywhere it wants to. And, quite often, will do so in anything but an orderly manner. Your job is to follow the narrator on his or her journey. For example, in this passage, in line 27, the name “Hanako” suddenly pops up out of nowhere. Having read the italicized introduction to the passage, the effective test-taker should realize that this passage is about the era of acting in silent films in the early 1900’s and that Moran owns the production company the narrator is working for. Line 27 represents an important shift in the narrative, as I mentioned earlier, effective test-taker must be aware of.

Remember, for each passage, effective test-taker needs a vital “take-away,” which is another way of saying the theme of the narrative. Here, we are reading a passage about the experiences of the narrator—an inexperienced actor—who is working in a silent film and how fortunate the narrator is that he has been taken under the wings of a more experienced actor named Hanako who is

conveying extremely pertinent advice to the narrator regarding acting in a silent film.

THAT'S IT.

Question 1: Vocabulary in Context Question with emphasis on context, meaning for these types of questions—two per passage, ten altogether—the effective test-taker must always go back into the passage, (I DO NOT CARE HOW SEEMINGLY EASY THE VOCABULARY WORD APPEARS, THE TEST-TAKER'S JOB, THROUGHOUT THE ENTIRE TEST, IS TO ALWAYS "GET ALL THE GET-ABLE QUESTIONS.") therefore always re-read the sentence, locating the context clues as to meaning of the vocabulary word. Then re-read the sentence, replacing the word with the answer choices.

[REMEMBER, ON THE SAT, YOU CAN ALWAYS CHANGE THE WORDING—OR THE NUMBERS ON THE MATH PORTION OF THE SAT TEST—BUT YOU CAN NEVER CHANGE THE MEANING. HERE, YOU CAN ALSO REPLACE THE ANSWER CHOICES WITH SYNONYMS OF YOUR CHOOSING OR CREATE YOUR OWN PHRASE TO HAVE THE SENTENCE MAKE SENSE.].

Here, when you focus on 'early years' as a context clue to the meaning of primitive in this sentence, you will see answer is —A

Question 2:

[ALL QUESTIONS ARE IN THE CONTEXT OF THE PASSAGE WHETHER QUESTION EXPLICITLY STATES THAT OR NOT.].

In this question, we need to discern relevancy of Jamestown Junction in the context of the passage. In this regard, focus on Line 4: ‘outdoor sets’ as well as Lines 7-9 to lead you to —D

Question 3:

[YOU MUST REALIZE NOT ALL QUESTIONS ARE EQUAL IN DIFFICULTY LEVEL. ON THE READING TEST YOU CAN HAVE AN EASY QUESTION FOLLOWED BY A HARD QUESTION, LIKE HERE.].

But, if you focus on the words “in retrospect” in Line 1, you will see the answer —D

[BE CAREFUL: KNOW THAT EVERY WORD COUNTS ON THE SAT: CHANGE JUST ONE WORD IN THE QUESTION, THE ANSWER CHOICE OR THE PASSAGE AND YOU CHANGE THE CORRECT ANSWER. THIS IS WHY IT IS SO IMPORTANT FOR THE TEST-TAKER TO MAKE SURE YOUR ANSWER SELECTIONS ALWAYS HAVE TEXTUAL SUPPORT.].

Question 4: Focus on lines 24-26 to know answer —C

Question 5: —B

[FOR THESE TYPES OF QUESTIONS KNOW THERE ARE TWO PER PASSAGE, TEN ALTOGETHER ON THE TEST, BUT ALSO BE CAREFUL BECAUSE 2-3 OF THESE QUESTIONS ARE NOT ASKING FOR LINES SUPPORT FOR QUESTION ABOVE, BUT AN ALTOGETHER DIFFERENT QUESTION. AS FOR BEST STRATEGY, I PREFER PRO-ACTIVELY FINDING ANSWER TO QUESTION 4 FROM THE WORDS OF THE PASSAGE—AS I DID HERE—THEN, BY MULTI-TASKING YOU WILL ALREADY KNOW THE ANSWER TO QUESTION 5.].

Question 6: Context clue from line 35 is “gestured expansively” which takes us —A

[ON SAT READING, SOMETIMES YOU MUST BROADEN YOUR SEARCH FOR THE CORRECT ANSWER; SOMETIMES YOU MUST NARROW YOUR SEARCH.

NO MATTER, YOUR TASK IS TO FIND THE CORRECT ANSWER. IN THIS REGARD DO NOT STOP YOUR SEARCH WITHIN THE WORDS OF THE PASSAGE UNTIL THE SEARCH IS COMPLETE.

FOR EXAMPLE, YOU MUST LOOK AT LINES 56-63 TO FIND YOUR ANSWERS TO QUESTIONS 7 AND 8 WHICH ARE C AND B RESPECTIVELY.].

Question 9: Use lines 80-81 —B

Question 10: Use lines 82-88 —B

PASSAGE TWO: ‘SOFT SCIENCE’ PASSAGE

[FOR SOFT SCIENCE PASSAGES, YOU MUST UNDERSTAND WHAT THE EXPERIMENT INVOLVES, HOW THE EXPERIMENT WAS CONDUCTED, AND THE RESULTS OF THE EXPERIMENT.].

In Passage 2, researchers were trying to assess the news media’s influence. Researchers assembled a collection of small and mid-sized news outlets. Researchers found that media had influenced their readers’ opinions, but this influence was limited to social media.

[BECAUSE YOU NEED THE THEME, ON PASSAGES 2-5 PAY CLOSE ATTENTION TO THE START AND END OF THE PASSAGES.].

[THERE WILL BE FIGURES/CHARTS/DIAGRAMS ON TWO OF THE FIVE PASSAGES—TYPICALLY LOCATED INSIDE PASSAGES 2,3,5.].

Question 11: Must think broadly to discern theme of passage which is why Lines 1-16 and 70-77 send us to —D

Question 12: Context clue is ‘content’ leading to —C

Question 13: Lines 13-16 support —D

Question 14: Lines 45-53 support —B

Question 15: SOMETIMES, THE SENTENCE IS NEUTRAL, BUT A CONSCIENTIOUS TEST-TAKER WILL ALWAYS CONTINUE SEARCHING UNTIL THE ANSWER IS FOUND. HERE, THE CONTEXT CLUE IS “INCREASE” FOUND IN LINE 61 —B

Question 16: Lines 31-37 —C

[TYPICALLY, THE QUESTIONS ARE ROUGHLY CHRONOLOGICAL, BUT, AS HERE, NOT ALWAYS. REMEMBER THE SAT PUNISHES RIGIDITY; REWARDS FLEXIBILITY.].

Question 17: Lines 70-73 —A

Question 18: —C

Question 19: Figure 1 supports —D

Question 20: Figure 2 supports —A

[PLEASE NOTE FOR QUESTIONS ON CHARTS/ FIGURES/DIAGRAMS BE PRO-ACTIVE, MEANING READ WHAT x and y AXES REPRESENT AS WELL AS ALL RELEVANT DATA.].

PASSAGE THREE: “SOFT SCIENCE” PASSAGE

[YOU MUST DISCERN MAIN GIST OF PASSAGE, WHICH TYPICALLY IS PROVIDED AT START AND/OR END OF PASSAGE, BUT NOT ALWAYS B/C SAT PUNISHES RIGIDITY, REWARDS FLEXIBILITY. HERE, THE KEY TO UNDERSTANDING PASSAGE 3 IS CONTAINED IN LINES 15-18: TO TEST THE LIMITS OF BUMBLEBEES’ COGNITIVE POWERS BY TASKING THEM TO PERFORM ACTIONS UNLIKE THEIR NATURAL BEHAVIOR.].

Question 21: Lines 63-70 send us —D

Question 22: For structure questions, effective test-taker must take entire passage into account, focusing on crucial shifts in the passage, here sending us —C

Question 23: Lines 11-15 send us —D

Question 24: Lines 27-29 send us —A

Question 25: —D

Question 26: Lines 46-49 —C

Question 27: —B

Question 28: Context clue “easiest” in Line 62 sends us —B

Question 29: Figure 1 “trained bee” sends us —A

Question 30: “none” in Figure 2 sends us —D

Question 31: context clue “even just a few” in line 69 sends us —B

PASSAGE FOUR: “HISTORICAL PASSAGE”

[HERE, FOCUS ON FIRST AND LAST PARAGRAPHS TO DISCERN THEME OF PASSAGE, WHICH CONCERNS DIFFICULTIES ENCOUNTERED WORKING AS A REFORMER.].

[NEVER EVER GET CAUGHT IN THE WEEDS OF HISTORICAL PASSAGES—YOU ARE ALWAYS LOOKING FOR OVERALL THEME HERE.].

Question 32: Lines 1-10 send us —B

Question 33: Lines 12-16 —A

Question 34: —D

Question 35: Lines 17-42 —C

Question 36: Lines 17-21 —B

[BE CAREFUL: COMMON SAT TRICK ON LINE QUESTIONS IS TO PROVIDE TEST-TAKER WITH TOO

FEW OR, AS HERE, TOO MANY LINES HOPING TO CONFUSE TEST-TAKER. RECALL: TEST-TAKER'S JOB IS TO DO WHAT NEEDS TO BE DONE TO LOCATE THE CORRECT ANSWER FROM WORDS OF THE PASSAGE.].

Question 37: Lines 12-16 —D

[FUNCTION QUESTIONS LIKE QUESTION 37 NEVER INVOLVE THE LINES TEST-TAKER IS SENT TO IN THE QUESTION. USUALLY CORRECT ANSWER PRECEDES THOSE LINES BUT CORRECT ANSWER CAN SOMETIMES BE FOUND SUBSEQUENT TO LINES CITED IN THE QUESTION.].

Question 38: Lines 21-30 —D

Question 39: —A

Question 40: Lines 39-41 —C

Question 41: Lines 55-64 —A

Question 42: Context clue “effect is electrical” supports —A

PASSAGE FIVE: NATURAL SCIENCE

[EVEN STUDENTS WHO LIKE SCIENCE TEND TO DISLIKE NATURAL SCIENCE PASSAGES. WHY? BECAUSE THEY MISTAKENLY BELIEVE THAT NATURAL SCIENCE PROVIDES DEFINITIVE SCIENTIFIC ANSWERS WHEN THE REALITY IS QUITE DIFFERENT. AS A TEST-TAKER UNDERSTAND THE NATURAL SCIENCE PASSAGE WILL ALWAYS START WITH A HYPOTHESIS WHICH WILL BE COUNTERED THROUGHOUT REST OF PASSAGE.].

[DUAL PASSAGES: READ PASSAGE ONE ANSWER QUESTIONS ON ONE, THEN PASSAGE TWO, ANSWER QUESTIONS ON TWO THEN ON BOTH. ALSO DUAL PASSAGES TEND TO PRESENT DICHOTOMOUS VIEWS ON A TOPIC. RARELY WILL YOU ENCOUNTER DUAL PASSAGES THAT ARE MORE SIMILAR THAN DIFFERENT FROM EACH OTHER. IT IS MOST COMMON TO ENCOUNTER PASSAGES THAT ARE MORE DIFFERENT THAN SIMILAR, AND SOMETIMES, COMPLETELY OPPOSITE EACH OTHER. ALSO KNOW ONE QUESTION WILL ALWAYS ASK HOW THE TWO PASSAGES ARE SIMILAR AND HOW THEY DIFFER SO AS YOU USE GOLDILOCKS APPROACH, JUDICIOUSLY UNDERLINING VITAL POINTS, KEEP THIS IN MIND. FINALLY, DUAL PASSAGES ARE TYPICALLY CONTAINED IN HISTORICAL OR NATURAL PASSAGE WHEN

CONTAINED IN HISTORICAL PASSAGE, PASSAGE TWO IS TYPICALLY EASIER TO COMPREHEND THAN PASSAGE ONE.].

Question 43: Lines 20-23 support —D

Question 44: —C

Question 45: Lines 51-56 support —D

Question 46: Context clue “wouldn’t generate enough planets … all the wanderers.” supports —A

Question 47: Lines 85-92 support —C

[RECALL THAT SAT REWARDS FLEXIBILITY. HERE, THE SAT GAVE YOU THE PRECISE LINES YOU NEEDED TO ANSWER PRECISE QUESTION ASKED. YOUR JOB IS TO FIND CORRECT ANSWER INSIDE WORDS OF THE PASSAGE NO MATTER WHAT.].

Question 48: Context clue “planet’s existence” supports —A

Question 49: Lines 9-15 from Passage 1 and Lines 79-83 from Passage 2 support —A

Question 50: Lines 66-69 support —B

Question 51: —C

Question 52: Lines 66-84 support —A

Section 2: Writing and Language Test

SUCCESS ON THE SAT WRITING AND LANGUAGE TEST REQUIRES THE TEST-TAKER TO MEMORIZE ALL THE VARIOUS GRAMMAR RULES TESTED ON THE SAT WRITING AND LANGUAGE TEST. FOR A SUMMARY OF THESE RULES, PLEASE REFER TO SAM'S COMPRESSED SAT/ACT GRAMMAR DOCUMENT, LOCATED IN THE FREE RESOURCES SECTION OF COLLEGE CONNECTION'S WEBSITE. FOR MORE COMPREHENSIVE ASSISTANCE, PLEASE REFER TO SAM'S EXHAUSTIVE SAT WRITING AND LANGUAGE TEST DOCUMENT, LOCATED IN THE PAID RESOURCES SECTION OF COLLEGE CONNECTION'S WEBSITE.

[YOU MUST CAREFULLY STUDY MY SAT/ACT COMPRESSED GRAMMAR DOCUMENT IN ORDER TO DO WELL ON SECTION 2.].

SECTION 2 IS DIVIDED INTO FOUR PASSAGES 11 QUESTIONS EACH, LEAVING EIGHT MINUTES FORTY-FIVE

SECONDS PER PASSAGE. HOWEVER, PLEASE NOTE THAT THE LAST TWO PASSAGES ARE SLIGHTLY MORE DIFFICULT THAN THE FIRST TWO PASSAGES.

PASSAGE ONE: SHEDDING LIGHT ON THE PROBLEM

Question 1: —A

Question 2: You must use a colon to expand on the concept before the colon. In this sentence ask: What is the potential threat to pollinators? Since answer is artificial light, artificial light expands on concept (potential threat to pollinators) before the colon —B

Question 3: Diction Error (Word Choice) —C

Question 4: This sentence, as written, is a comma splice because it involves two independent related clauses that need a semicolon not a comma. You can fix the problem, as here, by transforming through use of word 'while' the second clause from an independent clause into a dependent clause —B

Question 5: Need find a link: either link start of inserted sentence with end of sentence before it and/or link end of inserted sentence with start of sentence after it —C

Question 6: [CHECK SHORTEST SENTENCE FIRST WHEN QUESTION ASKS YOU TO COMBINE TWO SENTENCES INTO ONE SENTENCE.]. —D

Question 7: Go to graph —B

[PLEASE NOTE: JUST AS ON THE READING TEST, BEFORE ANSWERING ANY GRAPH QUESTIONS ON THE WRITING AND LANGUAGE TEST, MAKE SURE YOU FULLY COMPREHEND WHAT GRAPH IS TELLING YOU.].

Question 8: Go to graph —C

Question 9: Look at start of next paragraph —D

Question 10: —A

Question 11: Idiom/Diction Errors [Preposition/Proper Word Choice Errors.]. —C

PASSAGE TWO: BENEFITS OF DRESS CODE FLEXIBILITY

Question 12: Lack of Subject/Verb Coordination
Locate the subject noun and subject predicate in the sentence—no matter how far apart, singular noun 'decision' with the singular verb 'reflects' —B

Question 13: First off, you would never place an -ing verb after a semicolon because an -ing verb is one way of transforming an independent clause into a dependent clause. Second off, this sentence represents Lack of Parallelism Error —D

Question 14: Vague Pronoun Error —C

Question 15: Proper Punctuation of Plural Possessive —A

[GO TO MY DISCUSSION OF PROPER POSSESSIVE PUNCTUATION IN MY COMPRESSED SAT/ACT GRAMMAR DOCUMENT.].

Question 16: Go to Graph —D

Question 17: Step One: First decide yes or no — data is accurate representation of survey —A
Question 18: When you return after reading entire paragraph you will know —D

Question 19: Faulty Coordination Error: Descriptive, dependent opening clause requires proper noun after the comma: “When … workplace, workers …” —B

Question 20: No pause in flow of sentence nor separating independent from dependent clause —B

Question 21: Diction (Proper Word Choice) —A

Question 22: Adding information —B

PASSAGE THREE: THE FILTERED NET

Question 23: [When two independent clauses are joined by a conjunction, we place a comma before said conjunction.]. —D

Question 24 Diction –A

Question 25: [Check shortest answer first.]. —C

Question 26: Must read entire passage, return to question to know —C

Question 27: No need for a comma —D

Question 28: Lack of Subject/Verb Coordination—link “Participants” (plural) to were (plural) —C

Question 29: Opening Dependent Clause “While … positions …” followed by an Independent Clause “filters … results.” are separated by a comma —A

Question 30: With a plural possessive: users, add apostrophe after the s to show possession —D

Question 31: All pronouns require a noun antecedent: A proper noun the pronoun replaces for. [Note: This proper noun does not necessarily need to be found in the same sentence.]. Here, the pronoun “This” is a non traditional pronoun looking backwards in the text to “produce similarly slanted results.” from the previous paragraph —A

Question 32: Proper Colon Usage: Word or concept after the colon expands upon the word or concept before the colon —C

Question 33: First decide “Kept or Deleted” then read rationale —B

PASSAGE FOUR: OGALA LAKOTA ART GETS ROLLING

Question 34: This is a dependent clause inside an independent clause; therefore, must surround the dependent clause with commas. —D

Question 35: Carefully read prior sentence, link to subsequent sentence —C

Question 36: Verb Tense Error —D

Question 37: Parallelism/Best Re-cap of Main Points in the passage —B

Question 38: Another dependent clause surrounded by an independent clause —B

Question 39: Again, start with shortest sentence —B

Question 40: ALL PRONOUNS BEARING AN APOSTROPHE, SUCH AS ‘IT’S’ ARE CONTRACTIONS: ‘IT IS’; IRONICALLY, POSSESSIVE PRONOUNS, SUCH AS ‘ITS’ DO NOT HAVE BEAR AN APOSTROPHE —A

Question 41: Here, this opening Independent Clause “The bus … travels” followed by a comma requires Dependent Clause —A

[IN THIS REGARD, RECALL -ING VERB IN THE MIDDLE OF THE SENTENCE CONNOTES A DEPENDENT CLAUSE, JUST AS TWO INDEPENDENT CLAUSES SEPARATED BY A CONJUNCTION {AND, OR, BUT, ETC.} ARE ALSO SEPARATED BY A COMMA.].

[BE CAREFUL: SAT LIKES TO PUT TWO ‘NO CHANGE’ ANSWERS IN A ROW.].

Question 42: [Never place commas around a person’s name because, using the ‘take-out’ rule whatever is inside such commas you can take out of sentence left with perfectly good sentence.]. —B

Question 43: From “While … hub” in context of passage, is a dependent clause; the rest of the sentence is an independent clause. —D

Question 44: THIS QUESTION PROVES THAT TEST-TAKERS MUST ALWAYS READ ENTIRE PASSAGES IN WRITING AND LANGUAGE PORTION OF THE SAT. Having read entire passage, only answer that works —C

Section 3: Math No Calculator Test

SUCCESS ON THE SAT MATH NO CALCULATOR TEST REQUIRES THE TEST-TAKER TO NOT ONLY MEMORIZE VARIOUS SAT MATH FORMULAS, BUT, ALSO, TO BECOME ACQUAINTED WITH THE VARIOUS SAT MATH NO CALCULATOR PRINCIPLES COVERED IN SECTION 3 OF SAT MATH. FOR A SUMMARY OF THESE MATH FORMULAS AND PRINCIPLES, PLEASE REFER TO SAM'S COMPRESSED SAT/ACT MATH DOCUMENT, LOCATED IN THE FREE RESOURCES SECTION OF COLLEGE CONNECTION'S WEBSITE. FOR MORE COMPREHENSIVE ASSISTANCE ON THE SAT MATH NO CALCULATOR TEST, PLEASE REFER TO SAM'S EXHAUSTIVE SAT MATH NO CALCULATOR DOCUMENT, LOCATED IN THE PAID RESOURCES SECTION OF COLLEGE CONNECTION'S WEBSITE.

MATH NO CALCULATOR TESTS PURE MATH CONCEPTS. THE QUESTIONS CONTINUE TO GET MORE DIFFICULT FROM QUESTIONS 1-15 MULTIPLE CHOICE QUESTIONS, AS WELL AS QUESTIONS 16-20 STUDENT-GENERATED QUESTIONS. THEREFORE, A GOOD TEST-TAKER KNOWS HE OR SHE MUST GET ALL THE "GET-ABLE" QUESTIONS TOWARDS THE START

OF SECTION 3 MULTIPLE CHOICE AND STUDENT-GENERATED QUESTIONS BECAUSE YOU NEVER KNOW IF YOU WILL BE ABLE TO CORRECTLY ANSWER THE HARDER QUESTIONS THAT ARE SURE TO COME AS YOU GET CLOSER TO QUESTION 15 AND QUESTION 20. THIS MEANS DO NOT RUSH ON THE EARLIER, EASIER QUESTIONS IN SECTION 3.

YOU MUST 'GET ALL THE GET-ABLES' THIS MEANS THAT IN MY TWENTY YEARS OF TUTORING, ALL TOO OFTEN I SEE MY STUDENTS, DURING OUR PRACTICE EXAMS RUSHING THROUGH THE EASIER EARLIER QUESTIONS IN BOTH SECTIONS 3 AND 4 MATH. HERE IS MY RESPONSE: NO, NO, NO !!!

THINK ABOUT IT LOGICALLY: YOUR ULTIMATE SAT SCORE IS BASED ENTIRELY ON HOW MANY QUESTIONS THE TEST-TAKER ANSWERED CORRECTLY {THE SAT NO LONGER TAKES OFF FOR WRONG ANSWERS} THEREFORE, WHY ON EARTH WOULD A TEST-TAKER EVER RUSH THROUGH THE EARLIER MATH QUESTIONS, AND RISK MAKING A CARELESS MISTAKE. BOTTOM LINE: DO NOT DO THAT BECAUSE STRATEGY IS NOT A WINNING STRATEGY; THAT STRATEGY IS A LOSING STRATEGY. AS A COROLLARY TO THIS STRATEGY: NO MENTAL MATH EVER, ESPECIALLY WHEN THE QUESTION REQUIRES THE

TEST-TAKER TO MAKE MULTI-STEP COMPUTATIONS. THEREFORE, MAKE SURE YOU WRITE SOMETHING DOWN ON EACH AND EVERY MATH QUESTION. EVEN WITH SECTION 4 CALCULATOR MATH, SAM NEEDS YOU TO BE UNDERLINING THE RELEVANT WORD(S) CONTAINED IN EACH QUESTION, AS WELL AS CAREFULLY THINKING ABOUT, AT TIMES, WRITING DOWN COMPUTATIONS YOU NEED TO MAKE USING YOUR CALCULATORS.

Question 1: There are about forty-five math equations you must memorize. (For a list of these formulas, check out my SAT/ACT Math document.). Here, start with equation of a line formula: y = mx + b where m is the slope of the line: Slope Formula [y (2) — y (1) / x (2) — x (1)] and b is y-intercept the y coordinate where x equals 0, as opposed to the x intercept the x coordinate where y equals 0. Once you know the equation of a line, all coordinate points of the line will fit into this equation. Here, grab two definite coordinate points in each of the graphs, plug into slope formula, looking for a result of -1/4 and a y-intercept of (0, -2). Furthermore, negative slopes go from right to left, whereas, positive slopes go from left to right. Based upon this knowledge, we can eliminate Answer Choices A) and B). Since Answer Choices C) and D) both have a negative slope and a y-intercept of (0, -2) you must grab two definite coordinate points and ascertain the slope. Here, in C) use (0, -2) and (1, -6): -6 — (-2) / 1 — 0

equals -4/1 = -4; however, in D) use (0, -2) and (-8, 0):
0 — (-2) / -8 — 0 = 2 / -8 = -1/4 —D

Question 2: x sq'd + 10 = 91 Subtract 10 from both sides of the equation, leaving x sq'd = 81. Take square root of both sides, leaving x = 9 —A

[REMEMBER: WHEN YOU ARE IN ADDITION/ SUBTRACTION LAND, STAY THERE; WHEN YOU ARE IN MULTIPLICATION/DIVISION LAND, STAY THERE. AND, HOW DO YOU KNOW YOU ARE IN ADDITION/ SUBTRACTION LAND VERSUS MULTIPLICATION/ DIVISION LAND? EASY: WHEN YOU SEE A PLUS OR MINUS SIGN IN THE QUESTION, YOU ARE IN ADDITION/SUBTRACTION LAND; WHEN THERE IS AN INTEGER/FRACTION CONNECTED TO A VARIABLE AND QUESTION ASKS FOR VALUE OF VARIABLE ALL BY ITSELF, DIVIDE OUT THE INTEGER/FRACTION.].

Question 3: x + 7 = 3(x — 3) Step One: Distribute 3 inside the parentheses giving us x + 7 = 3x — 9. Step Two: Add 9 to both sides and subtract x from both sides of the equation producing: 16 = 2x. Step Three: Divide 2 on both sides of the equation to produce: 8 = x —B

Question 4: Using equation of a line: $y = mx + b$ where m is the slope and b is the y-intercept —C

Question 5: We need to translate German “groschen” coins into German “pfennig” coins —B

Question 6: When deconstructing Math questions, ignore $x > 0$ — leave that information to post-grads in Math.

[REMEMBER: IN MATH, THE RULES GOVERNING ADDITION/SUBTRACTION ARE ALWAYS DIFFERENT FROM THE RULES GOVERNING MULTIPLICATION/ DIVISION.].

FRACTION QUESTIONS ARE NO DIFFERENT:

WITH REGARD TO FRACTIONS, IN ORDER TO ADD/ SUBTRACT FRACTIONS YOU NEED THE SAME DENOMINATOR, ONCE YOU HAVE THE SAME DENOMINATOR, THEN ADD/SUBTRACT THE NUMERATORS.

FOR EXAMPLE, 2/3 + 3/4 STEP ONE: MULTIPLY THE DENOMINATORS: (3)(4) = 12. STEP TWO: MULTIPLY THE NUMERATOR FROM THE FIRST FRACTION WITH

THE DENOMINATOR FROM THE SECOND FRACTION: (2)(4) = 8 THEN MULTIPLY THE NUMERATOR FROM THE SECOND FRACTION WITH THE DENOMINATOR FROM THE FIRST FRACTION: (3)(3) = 9 THEN ADD 8 + 9 = 17 FINAL STEP: PLACE THE ADDED. NUMERATORS ABOVE THE COMMON DENOMINATOR: 17/12.

FOR THIS QUESTION: FOLLOWING ABOVE STEPS, MULTIPLY THE DENOMINATORS FROM THE TWO FRACTIONS: (x)(2x) = 2x sq'd WHICH IS OUR COMMON DENOMINATOR. THEN, MULTIPLY THE NUMERATOR FROM THE FIRST FRACTION WITH THE DENOMINATOR FROM THE SECOND FRACTION: (1)(2x) = 2x THEN MULTIPLY THE NUMERATOR FROM THE SECOND FRACTION WITH THE DENOMINATOR FROM THE FIRST FRACTION: (1)(x) = x NOW ADD 2x + x = 3x AND PLACE 3x/2x sq'd DIVIDE OUT THE x FROM NUMERATOR AND DENOMINATOR LEAVING 3/2x —C

[RECALL IN AN ALGEBRAIC EQUATION, WHATEVER YOU DO ON ONE SIDE OF THE EQUATION, YOU MUST DO ON THE OTHER SIDE, JUST AS, IN A FRACTION WHATEVER YOU DO TO THE NUMERATOR, YOU MUST DO TO THE DENOMINATOR.].

WHEN YOU MULTIPLY FRACTIONS, SIMPLY MULTIPLY NUMERATOR TO NUMERATOR AND DENOMINATOR TO DENOMINATOR: (5/7)(2/5) = 10/35 TO REDUCE THIS

FRACTION, THEN DIVIDE NUMERATOR AND DENOMINATOR BY 5 = 2/7.

WHEN YOU DIVIDE FRACTIONS, MULTIPLY THE NUMERATOR TIMES THE RECIPROCAL OF THE DENOMINATOR: (2/3) / (7/4) = (2/3)(4/7) NOW MULTIPLY NUMERATORS AND DENOMINATORS EQUALS 8/21. WHEN YOU HAVE AN INTEGER, PLACE A 1 UNDER IT TO CREATE A FRACTION: (5/4) / 15 = (5/4) / (15/1) WHICH EQUALS: (5/4)(1/15) DIVIDE 5 INTO 15, LEAVING (1/4)(1/3) EQUALS 1/12. THE LONGER ROUTE IS TO MULTIPLY THE NUMERATORS OF THE TWO FRACTIONS (5)(1) = 5 AND THE DENOMINATORS OF THE TWO FRACTIONS (4)(15) = 60 WHICH EQUALS 5/60, NOW REDUCE BY DIVIDING NUMERATOR AND DENOMINATOR BY 5, LEAVING 1/12.

[EXCELLENT MATH TRICK: IN FRACTION MULTIPLICATION/DIVISION, WHEN THE NUMERATOR OF THE FIRST FRACTION IS A FACTOR/MULTIPLE OF THE DENOMINATOR OF THE SECOND FRACTION, REDUCE ACCORDINGLY. SAME HOLDS TRUE WITH REGARD TO WHEN THE NUMERATOR OF THE SECOND FRACTION IS A FACTOR/MULTIPLE OF THE DENOMINATOR OF THE FIRST FRACTION. FOR EXAMPLE, (7/18) (12/21) DIVIDE 7 INTO 21 LEAVING 1 AND 3 THEN DIVIDE 12 AND 18 BY 6 LEAVING 2 AND 3. PUTTING ANSWER TOGETHER, WE NOW HAVE (1/3) (2/3) WHICH EQUALS 2/9.].

Question 7: YOU MUST MEMORIZE THE EQUATION OF A CIRCLE: (x — h) sq'd + (y — k) sq'd = r sq'd. In this equation, x,y are all the x,y coordinate points around the circumference of the circle, and h,k are the x,y coordinate points of the center of the circle, and r is the radius of the circle. Step One: If this equation had had +5 after 6y you would have had to subtract 5 from both sides of the equation because in order to "Circle the Square" you can only have x/y squared and integer attached to x/y on left hand side of the equation. Step Two: Go to the integer before the x variable— here -10 — half the integer then square it producing +25. Now add 25 to both sides of the equation. Step Three: Go to the integer before the y variable— here +6 — half the integer then square it producing +9. Now, add 9 to both sides of the equation, leaving:

x sq'd —10x + 25 + y sq'd + 6y + 9 = 63 (2 + 25 + 9)

Now factor both quadratic equations into:

(x — 5) sq'd + (y + 3) sq'd = 36

Please Note: Center x,y coordinates are always the opposite of the integers inside the parentheses because the equation of a circle uses (— h) and (— y). Therefore,

the center is (5, -3) and the radius is 6 — the sq root of 36 —C

Question 8: Best strategy to answer this question is: P.I.A. (Plug in Answers):

1 > 4 (incorrect answer)
-2 > -8 -2 < -(-2) -2 is less than 2 (correct answer) —B

Question 9: Evaluation the equation—most equations on the SAT Math can be seen using equation of a line template. For example, y = mx + b Here, h is y, 150 is b (the y-intercept — the starting point) and 10 is m and t is x. Therefore, there were 150 housing units when the new zoning law was passed; thereafter, 10 housing units were added each month —A

Question 10: [RECALL: RULES GOVERNING ADDITION/ SUBTRACTION ARE DIFFERENT FROM THE RULES GOVERNING MULTIPLICATION/DIVISION. FOR EXAMPLE, WHEN DEALING WITH POLYNOMIALS, IN ORDER TO ADD/SUBTRACT POLYNOMIALS, YOU MUST HAVE THE SAME EXPONENTS; HOWEVER, IN ORDER TO MULTIPLY/DIVIDE POLYNOMIALS, YOU DO NOT NEED THE SAME EXPONENTS.]

On Question 10–Step One: Whenever you see a minus sign outside parentheses simply place a 1 outside parentheses and multiply every quantity inside parentheses by -1, producing -5x sq'd + x + 7. Now combine match polynomials/integers:
(2x sq'd) — (5x sq'd) = -3x sq'd and 3x + x = 4x and -2 + 7 = 5. When you combine —D

Question 11: Here, go to the extremes first: Plug in -1 and 1 for a, then other values for a between -1 and 1.

[REMEMBER: IT DOES NOT MATTER WHICH LETTERS ARE USED IN THE PARENTHESES: FIRST LETTER IS THE x COORDINATE, THE SECOND LETTER IS THE y COORDINATE—HERE a IS x AND b IS y.]

Plug in -1 for a:

$y = (-1 - 1)(-1 + 1)(-1 + 2) = 0$

Plug in 1 for a:

$y = (1 - 1)(1 + 1)(1 + 2) = 0$

Plug in 0 for a:

$y = (0 - 1)(0 + 1)(0 + 2) = (-1)(1)(2) = -2$

Now evaluate: Any negative value between 0 and -1 will produce a negative answer; whereas, any positive value between 0 and 1 will also produce a negative value; therefore, the correct answer is —D

Question 12: Go to front page for math formulas: Volume of a Sphere is: 4/3 pi r cubed.

[BE CAREFUL: SAT TRICK: GIVE YOU DIAMETER WHEN YOU NEED RADIUS, AND VICE VERSA.].

Knowing that r = d/2, place x/2 and 3x/2 into formula: [WHENEVER YOU ARE EVALUATING THE SAME FORMULAS WITH ONE DIFFERING ELEMENT, AS HERE, SIMPLY FOCUS ON THAT DIFFERING PART OF THE FORMULA: HERE WE HAVE r = x/2 v. r = 3x/2:
(x/2) cubed = x cubed/8 and (3x/2) cubed = 27x/8.
Comparing the two, we have 27/3 = 9/1 —C

Question 13: Whenever you have an exponential equation of a line—or anytime you are testing exponents or integers or fractions—try and plug in unusual values. With exponents, start with 0 then, where applicable, move to negative exponents: Here, 2(3) power of x — plug in 0 for x. [On SAT MATH, ANY VALUE TO THE POWER OF ZERO ALWAYS EQUALS 1.]. Here: y = 2. (0,2) Always

write down the coordinate points. Checking the four graphs, only the graphs in Answer Choices A) and D) could work. [PLEASE NOTE: WHEN LOOKING AT A GRAPH ALWAYS SEEK OUT DEFINITE COORDINATE POINTS. WHERE THERE ARE NO DEFINITE COORDINATE POINTS, THEN ESTIMATE THE COORDINATE VALUES.]. Now plug in -1 for x:
y = 2(3) power of -1 equals (2)(1/3) = 2/3 EQUALS COORDINATE POINTS (-1, 2/3). [NEGATIVE EXPONENTS ARE ALWAYS THE RECIPROCAL VALUE: WHEN EVALUATING A NEGATIVE EXPONENT FIRST DEAL WITH THE MINUS SIGN BY RE-WRITING THE EXPONENT IN ITS RECIPROCAL FORMAT: 3 power -3: FIRST RE-WRITE AS 1/3 POWER OF 3 WHICH EQUALS 1/27 JUST AS 1/7 POWER OF -2 RE-WRITE AS 7/1 POWER OF 2 EQUALS 49. WHENEVER YOU SEE A FRACTION EXPONENT, THE NUMERATOR IS THE POWER; THE DENOMINATOR IS THE ROOT. FINALLY, IN ORDER TO MANIPULATE EXPONENTS, YOU MUST HAVE THE SAME BASE. ONCE YOU HAVE THE SAME BASE, IGNORE THE BASE AND MANIPULATE THE EXPONENTS:
5 POWER OF 3/4 / 25 POWER OF 2/3 STEP ONE: NEED COMMON BASE: CHANGE 25 TO 5 SQUARED.
RE-WRITE: 5 POWER OF 3/4 / (5 POWER OF 2/1) 2/3
NOW MULTIPLY (2/1)(2/3) EQUALS 5 POWER OF 4/3.
FINALLY, 5 POWER OF 3/4 / 5 POWER OF 4/3 WE MUST SUBTRACT 3/4 MINUS 4/3 STEP ONE: COMMON DENOMINATOR OF 12. NOW MULTIPLY NUMERATOR OF FIRST FRACTION WITH DENOMINATOR OF SECOND

FRACTION (3)(3) = 9 = 5 TO THE POWER OF 9/12 AND DENOMINATOR OF FIRST FRACTION WITH NUMERATOR OF SECOND FRACTION (4)(4) = 16 = 5 TO THE POWER OF 16/12. BECAUSE WE ARE DIVIDING EXPONENTS, WE SUBTRACT: 9/12 — 16/12 = -7/12. THEREFORE, OUR ANSWER IS 1/5 TO THE POWER OF 7/12.] CHECKING THE GRAPHS IN ANSWER A AND D WE KNOW —A

Question 14: Coordinate Geometry re-writes the coordinate points of a line as follows: letter outside the parentheses is name of the line, value inside the parentheses is the x coordinate—or whichever variable substitutes for the x coordinate, and what function equals is the y coordinate—or whichever variable substitutes for the y coordinate. Here f(x) = 0 simply is asking on the graph of line f, which x coordinate(s) have a matching y coordinate equal to 0 —C

[Please note: f(-2) as well as f(@2.2) would also equal 0. This question could also say f(0) equals, and the answer would be 4.].

Question 15: You can always P.I.N. to answer this question: For example, if you plug 6 in for t, the number of water hyacinths is 24, but if you put in 12 for t, the

number of water hyacinths is 48; therefore, the number of water hyacinths doubles every six days —B

[PLEASE NOTE, FOR BOTH SECTIONS 3 AND 4 SAT MATH, AS YOU GO THROUGH THE MULTIPLE CHOICE QUESTIONS, THE QUESTIONS BECOME INCREASINGLY MORE DIFFICULT; THE SAME PRINCIPLE HOLDS TRUE FOR THE STUDENT-GENERATED QUESTIONS.].

Question 16: Step One: Re-write equation, adding 8D to both sides of the equation as: 4T = 8D + 12H. Now, divide both sides of the equation by 4 producing: T = 2D + 3D; therefore, a is —2

Question 17: Step One: Subtract 26 - 10 = 16 divided by 2 equals 8. Now create two right triangles inside both sides of the quadrilateral with legs of 6 and 8 therefore hypotenuse is 10, meaning that AB and DC are both 10. Finally, add up 10 + 10 + 10 + 26 is —56

[REMEMBER: 3-4-5 RIGHT TRIANGLE AND EVERY MULTIPLE OF 3-4-5 ARE ALSO RIGHT TRIANGLES (QUICKER MANNER THAN USING PYTHAGOREAN THEOREM) AS WELL AS 5-12-13 RIGHT TRIANGLE AND EVERY MULTIPLE OF 5-12-13.].

Question 18: Whenever you see sq root as a solution(s) to quadratic function(s), go right to quadratic equation:

-b/2a +/- sq root b sq'd — 4ac / 2a

Then, using ax sq'd +/- bx +/- c List the a,b,c values

[PLEASE NOTE SAM PREFERS TO BREAK UP THE QUADRATIC EQUATION IN THIS MANNER SO AS TO MORE QUICKLY FACILITATE FINDING THE ANSWER.]

a = 1 b = -2 c = -1

Now, plug these values back into quadratic equation formula:

-(-2)/(2)(1) = 2/2 = 1 +/- sq root (-2) sq'd (-4)(1)(-1)

[I BELIEVE THIS IS THE BEST WAY TO WRITE THIS PART OF THE EQUATION OUT TO QUICKLY DETERMINE IF THE VALUE IS POSITIVE OR NEGATIVE.]

sq root 4 + 4 = 8 To simplify sq root, find largest perfect square that divides into 8–here 4 times 2. Take square root of 4, which is 2. So now we have 1 +/- 2 sq root 2 / 2 which equals 1 +/- sq root 2. Finally 1 + 2 is —3

Question 19: SYSTEM OF EQUATIONS QUESTIONS

You are provided two equations containing two different variables. In order to solve, you must transform one of the two variables into the other through Manipulation or Substitution. For the most part, the Manipulation Technique is the fastest—and best—way to solve System of Equation Questions.

$4x + y = 7$
$2x - 7y = 1$

Step One: Focus on the question. Here, because the question asks for the value of x, we must eliminate y as follows:

[PLEASE NOTE: YOU ARE NEVER ALLOWED TO BREAK UP A SYSTEM OF EQUATIONS.]

$7(4x + y = 7)$
$2x - 7y = 1$

$28x + 7y = 49$
$2x - 7y = 1$

After Manipulation, simply add/solve the two equations:

$30x = 50$
Finally x is 50/30 —5/3

If the question asked for the (x,y) coordinate points, simply plug in 5/3 for x into either original system of equations, and solve for y:

(4)(5/3) + y = 7

20/3 + y = 7

y = 7 - 20/3

[CONVERT 7 INTO A FRACTION WITH 3 AS THE DENOMINATOR BY MULTIPLYING THE NUMERATOR OF 7/1 BY 3: {RECALL: YOU CAN ALWAYS TRANSFORM AN INTEGER INTO A FRACTION BY PLACING A 1 IN THE DENOMINATOR.} THEREFORE, 7/1 EQUALS 21/3.

y = 21/3 — 20/3 = 1/3

Understand also, on more complex questions, you can always multiply each equation by different numbers to manipulate the two equations for the purpose of eliminating one of the two variables:

3x — 4y = 6
2x — 3y = 7

If the question asks for the value of y, you must eliminate x as follows:

-2(3x — 4y = 6)
 3 (2x — 3y = 7)

-6x + 8y = -12
 6x — 9y = 21

After manipulation, simply add/solve:

-y = 9 THEREFORE y = -9

[NOTICE ALSO, IF THE VARIABLE YOU SEEK TO ELIMINATE IS POSITIVE ON THE TOP/BOTTOM EQUATION, MULTIPLY BOTTOM/TOP EQUATION BY A NEGATIVE NUMBER, AND VICE VERSA.]

When the System of Equation question asks what x +/- y equals or what 5x +/- 5y equals, or any combination thereof, simply add the two Systems of Equations together:

3x + 2y = 7
2x + 3y = 3

5x + 5y = 10

Question asks value of x + y, therefore, divide 5x + 5y by 5, answer is 2.

Returning to original question, solving through Substitution:

$4x + y = 7$
$2x - 7y = 1$

Since we need the value of x, we must see y through the eyes of x. Therefore, using either the top (or bottom) System of Equation, do the following: $y = -4x + 7$

Now, plug $-4x + 7$ into bottom equation and solve for x:

$2x - 7(-4x + 7) = 1$
$2x + 28x - 49 = 1$
$30x = 50$
$x = 50/30 = 5/3$

Finally, sometimes, to solve a word problem, you must set up a System of Equations. For example: Recently, West Hollywood High School was selling tickets for its revival of "Chess." The school sold 500 tickets, student tickets sold for $5 each, adult tickets sold for $10 each making $3,375. How many student tickets were sold?

Break down the provided information into two equations:

$$\begin{aligned} s + a &= 500 \\ 5s + 10a &= 3{,}375 \end{aligned}$$

Since we are looking for s, we need to eliminate a:

$$\begin{aligned} -10(s + a &= 500) \\ 5s + 10a &= 3{,}375 \end{aligned}$$

$$\begin{aligned} -10s - 10a &= -5{,}000 \\ 5s + 10a &= 3{,}375 \end{aligned}$$

After Manipulation, simply add/solve the two equations:

$-5s = -1{,}625 \quad s = 325$

Question 20: [LINES, AND THE EQUATIONS THEREOF, PLAY A MAJOR ROLE ON THE MATH PORTION OF THE SAT. FOR EXAMPLE, THE VAST MAJORITY OF SYSTEMS OF EQUATIONS QUESTIONS ARE ACTUALLY EQUATIONS OF LINES. FURTHERMORE, IN THE EQUATION OF A LINE CONTEXT, 'SOLUTION' REFERS TO THE INTERSECTION BETWEEN THE TWO LINES. ON SAT MATH, THESE TYPES OF QUESTIONS COME IN THREE VARIETIES: NO INTERSECTION, AS HERE, ONE INTERSECTION, AND AN INFINITE NUMBER OF INTERSECTIONS.]

Two lines with no intersection refers to two parallel lines bearing the same slope, but different y-intercepts.

[IN THE VAST MAJORITY OF QUESTIONS INVOLVING LINES, THE FIRST STEP IS TO MANIPULATE THE TWO EQUATIONS INTO THE EQUATION OF A LINE FORMATS: $y = mx + b$ WHERE m IS THE SLOPE, b IS THE y-INTERCEPT, AND x AND y ARE ALL THE x,y COORDINATE POINTS OF THE LINE.]

In Question 20, the question, itself, has already manipulated itself into a useful format. $1/2x + 5 = kx + 7$ therefore, we know the slope is 1/2 and the two parallel lines have different y-intercepts: 5 and 7 respectively; therefore k is $-1/2$ or .5

More typically, this type of question would appear as follows:

$-3x + 6y = 12$
$ax - 8y = 15$

In the given equation, a is a constant. The equation has no solution. What is the value of a?

Manipulate both equations into equation of a line:

$6y = 3x + 12$ $y = 1/2x + 2$

$ax - 15 = 8y \quad y = ax/8 - 15/8$

Now that we know there are different y-intercepts: 2 and -15/8, ignoring x, we need to have the same m—slope: $1/2 = a/8$

[WHENEVER YOU HAVE TWO FRACTIONS FACING EACH OTHER ACROSS AN EQUALS SIGN—EVEN A FRACTION AND AN INTEGER—TRANSFORM THE INTEGER INTO A FRACTION BY PLACING A 1 UNDERNEATH THE FRACTION. YOU MUST ALWAYS CROSS MULTIPLY.]

$1/2 = a/8 \quad 2a = 8 \quad a = 4$

The following two equations have one solution, what is the x,y coordinate of the solution:

$-5x + 4y = 10$
$7y + 3x = -7$

First, manipulate these two equations into equations of a line format:

$4y = 5x + 10 \quad y = 5/4x + 5/2$
$7y = -3x - 7 \quad y = -3/7x - 1$

Because these two lines intersect at one coordinate point, simply do the following to obtain the y coordinate:

5/4x + 5/2 = -3/7x—1 (5/4x) + (3/7x) = -5/2 — 1

[TO ADD/SUBTRACT FRACTIONS, YOU NEED A COMMON DENOMINATOR: 28. NOW, DIVIDE 4 INTO 28 EQUALS 7 AND MULTIPLY 7 TIMES 5 EQUALS 35/28x. AND DIVIDE 7 INTO 28 EQUALS 4 MULTIPLY 4 TIMES 3 EQUALS 12/28x. NOW ADD 35 AND 12 EQUALS 47/28x. NEXT, CONVERT 1 INTO FRACTION: 2/2 AND SUBTRACT -5/2 — 2/2 EQUALS -7/2.]

47/28x = -7/2

[REMEMBER, IN MATH, DIFFERENT RULES ALWAYS GOVERN ADDITION/SUBTRACTION VERSUS MULTIPLICATION/DIVISION. IN ORDER TO DIVIDE 47/28 ON BOTH SIDES OF THE EQUATION, YOU MUST MULTIPLY BOTH SIDES OF THE EQUATION BY THE RECIPROCAL OF 47/28, WHICH IS 28/47.]

(28/47)(47/28)x = (-7/2)(28/47) x = -98/47

[REMEMBER OUR TRICK: WHEN YOU ARE MULTIPLYING FRACTIONS AND THE DENOMINATOR OF ONE FRACTION IS A FACTOR/MULTIPLE OF THE NUMERATOR OF THE OTHER FRACTION OR VICE VERSA, REDUCE BY DIVIDING ACCORDINGLY. HERE, THE DENOMINATOR OF THE FIRST FRACTION—2–IS A FACTOR OF THE NUMERATOR OF THE SECOND FRACTION—28–THEREFORE 2 DIVIDED INTO 28 EQUALS 14 LEAVING (-7/1)(14/47) NOW MULTIPLY THE FRACTIONS BY MULTIPLYING THE NUMERATORS AND THE DENOMINATORS, LEAVING: -98/14 WHICH IS THE COMMON x COORDINATE OF THE SOLUTION TO THE TWO EQUATIONS OF THE LINE. FINALLY, PLUG IN -98/14 INTO EITHER EQUATION OF A LINE TO OBTAIN THE COMMON y COORDINATE:

y = -3/7x —1 y = (-3/7)(-98/14) —1 y = (294/98) [DIVIDE NUMERATOR AND DENOMINATOR BY 98.] EQUALS y = 3 —1 = 2 THEREFORE, THE ONE SOLUTION TO THIS PROBLEM IS (-98/14, 2).

FINALLY, WHERE THE QUESTION STATES THERE IS AN INFINITE NUMBER OF SOLUTIONS, YOU ARE LOOKING FOR SAME LINE:

In the following equation, b is a constant. The two equations have an infinite number of solutions. What is the value of b?

$3x - 7y = 4$
$18x - by = 24$

Here, notice that both 18x and = 24, in the bottom equation, divided by 6, equals 3x and = 4, respectively, in the top equation. Therefore, to solve for b multiply (7)(6) = 42.

Section 4: Math with Calculator Test

SUCCESS ON THE SAT MATH WITH CALCULATOR TEST REQUIRES THE TEST-TAKER TO NOT ONLY MEMORIZE VARIOUS SAT MATH FORMULAS, BUT, ALSO, TO BECOME ACQUAINTED WITH THE VARIOUS SAT MATH WITH CALCULATOR PRINCIPLES COVERED ON THE SAT MATH WITH CALCULATOR TEST. FOR A SUMMARY OF THESE MATH FORMULAS AND PRINCIPLES, PLEASE REFER TO SAM'S COMPRESSED SAT/ACT MATH DOCUMENT, LOCATED IN THE FREE RESOURCES SECTION OF COLLEGE CONNECTION'S WEBSITE. FOR MORE COMPREHENSIVE ASSISTANCE ON THE SAT MATH WITH CALCULATOR TEST, PLEASE REFER TO SAM'S EXHAUSTIVE SAT MATH WITH CALCULATOR DOCUMENT, LOCATED IN THE PAID RESOURCES SECTION OF COLLEGE CONNECTION'S WEBSITE.

UNLIKE SECTION 3 NO CALCULATOR MATH, WHICH TESTS PURE MATH PRINCIPLES/FORMULAS USING SHORTER QUESTIONS WHERE EVERY WORD FROM THE QUESTION IS RELEVANT, SECTION 4 WITH CALCULATOR MATH INCLUDES FAR LONGER MATH QUESTIONS THAT INCLUDE IRRELEVANT PARTS OF

THE QUESTION. THE TRICK TO DOING WELL IN SECTION 4 CALCULATOR MATH IS TO ZERO IN ON THE FEW WORDS IN THE QUESTIONS THAT ARE RELEVANT, MAKING SURE TO UNDERLINE THOSE RELEVANT WORDS FROM THE QUESTION, THEN TO ANSWER ACCORDINGLY.

Question 1: Look at the chart: 4 + 3 = 7 —D

Question 2: Divide 441,000 by 36 = 12,250 —B

Question 3: For any box plot, the median is the straight line contained inside the box plot; the range is the end points of the entire graph not of the box plot. Here, for the Roman Empire box plot, the median is around 13–the range is around 22; for the Ancient Greece box plot, the median is around 18–the range is around 35. Therefore, the median of Ancient Greece is greater than the median of the Roman Empire. —A

Question 4: Whenever you have two quantities that are related to each, and proportional to another two related quantities, ALWAYS SET UP EXACTLY IN MANNER RATIO IS PROVIDED IN THE QUESTION, THEN CROSS-

MULTIPLY. RATIO CAN ALSO BE VIEWED AS A FRACTION: Here: 12/45 = x/85.5 Cross-multiply: 45x = 1026 Divide both sides by 45; therefore, x = 22.8 —C

Question 5: Plug in 3 for x into the equation: (3) sq'd — 7 = 9 — 7 = 2 —C

[UNDERSTAND THE DIFFERENCE BETWEEN 3x sq'd EQUALS 3x sq'd BUT (3x) sq'd EQUALS 9x sq'd.].

Question 6: TRICK QUESTION BECAUSE EVERY TIME YOU TOSS THE UNFAIR COIN, THE PROBABILITY THE COIN WILL TURN HEADS UP IS 0.6 AND TAILS UP IS 0.4; THEREFORE THE ANSWER —C

Question 7: —B (MOST ALL OF THE VALUES ARE THE SAME IN BOTH HISTOGRAMS, EXCEPT HISTOGRAM A INCLUDES ONE OUTLIER VALUE BETWEEN 60 AND 70 NECESSARILY INCREASING THE MEAN OF DATA SET A.

[MEAN, MODE, MEDIAN, STANDARD DEVIATION: MEAN IS THE AVERAGE: USE THE FORMULA (A = S/N) WHERE A IS AVERAGE (MEAN) S IS THE SUM OF THE NUMBERS AND N IS THE NUMBER OF NUMBERS.

FOR EXAMPLE, FIVE STUDENTS HAVE AN AVERAGE SCORE OF 92 IN THEIR MATH CLASS. AFTER A SIXTH STUDENT JOINS THE GROUP, THE AVERAGE SCORE OF THE GROUP IN THEIR MATH CLASS DECREASES TO 87. WHAT IS THE SIXTH STUDENT'S AVERAGE SCORE IN MATH?

USING THE FORMULA: A = S/N :

87/1 = (92)(5) + x / 6 — NOW CROSS-MULTIPLY :
(87)(6) = ((92)(5) + x)(1)) = 522 = 460 + x = 522
x = 522— 460 — x = 62 THEREFORE, THE SIXTH STUDENT HAD AN AVERAGE SCORE OF 62 IN THE MATH CLASS.

MODE IS SIMPLY THE NUMBER THAT APPEARS THE MOST NUMBER OF TIMES IN A LIST OF NUMBERS.

MEDIAN: STEP ONE: IS THERE AN EVEN OR ODD NUMBER OF NUMBERS? IF ODD NUMBER OF NUMBERS, DIVIDE BY 2 AND ROUND UP: 19/2 = 9.5 THEREFORE, THE TENTH NUMBER IN THE LIST OF NUMBERS IS THE MEDIAN. WITH AN EVEN NUMBER OF NUMBERS, DIVIDE BY 2 AVERAGE THAT NUMBER AND THE NEXT NUMBER UP: 16/2 THE AVERAGE OF THE 8TH AND 9TH NUMBERS IN THE LIST OF NUMBERS IS THE MEDIAN. PLEASE NOTE: MEDIAN IS NOT CONNECTED TO MEAN: THE MEDIAN OF 3,102, AND 103 IS 102. ALSO, BE AWARE THAT FREQUENCY

PLAYS A ROLE HERE: FOR EXAMPLE, RUNNERS A,B,C,D, AND E RAN AROUND A TRACK. RUNNER A RAN AROUND THE TRACK 2 TIMES, RUNNER B RAN AROUND THE TRACK 5 TIMES, RUNNER C RAN AROUND THE TRACK 6 TIMES, RUNNER D RAN AROUND THE TRACK 8 TIMES, AND RUNNER E RAN AROUND THE TRACK 10 TIMES. WHICH OF THESE RUNNERS RAN AROUND THE TRACK A MEDIAN NUMBER OF TIMES? FIRST, YOU MUST ADD 2+5+6+8+10 = 31 WHICH, TAKING FREQUENCY INTO ACCOUNT, IS THE TOTAL NUMBER OF TIMES THE RUNNERS RAN AROUND THE TRACK. BECAUSE 31 IS ODD, WE DIVIDE 31 BY 2 AND GET 15.5 ROUND UP TO 16, WE ARE THEREFORE LOOKING FOR THE 16TH RUNNER WHO RAN AROUND THE TRACK A MEDIAN NUMBER OF TIMES. NEXT, WE LIST THE RUNNERS IN AN ASCENDING ORDER STOPPING ON THE 16TH RUNNER. START WITH 2 A'S (REPRESENTING RUNNER A WHO RAN AROUND THE TRACK TWICE) FOLLOWED BY 5 B'S THEN 6 C'S AND FINALLY 8 D'S; THEREFORE, WE KNOW RUNNER D IS THE MEDIAN RUNNER HERE. {PLEASE NOTE: ALL TOO OFTEN STUDENTS WASTE THEIR TIME BY LISTING ALL THE NUMBERS IN ASCENDING ORDER, BUT THERE IS NO NEED. ONCE YOU HIT THE VALUE YOU NEED TO DETERMINE THE MEDIAN, STOP.]

STANDARD DEVIATION: TO DEVIATE MEANS TO GO AWAY FROM THE NORM. ON THE SAT, THE FURTHER

APART THE VALUES ARE, THE GREATER THE STANDARD DEVIATION, THE CLOSER TOGETHER THE VALUES ARE, THE LOWER THE STANDARD DEVIATION. USING THE SAME RUNNERS, RUNNING AROUND THE TRACK 31 TIMES BUT WITH RUNNER A RUNNING 1 TIME AROUND THE TRACK, RUNNER B RUNNING TWICE AROUND THE TRACK, RUNNER C RUNNING FOURTEEN TIMES AROUND THE TRACK, RUNNER D RUNNER ELEVEN TIMES AROUND THE TRACK, AND RUNNER E RUNNING AROUND THE TRACK THREE TIMES; THEREFORE THE SECOND GROUPING OF RUNNERS HAS A LOWER STANDARD DEVIATION THAN THE FIRST GROUPING OF RUNNERS.].

Question 8: Using the Distance Pyramid with D (Distance) at the top and R (Rate of Speed in miles/hour) and T (hours) at the bottom right and left hand corners of the pyramid, respectively. Such that D = (R)(T) and R = (D)/(T) and T = (D)/(R)

Here, using this Distance Formula, added to the fact, provided by the information in the question, that d = 60t, we know that Haimi traveled at the rate of 60 miles/hour. Therefore, Haimi traveled (60)(3) = 180 miles in three hours —D

Question 9: Using the Distance Formula and the provided graph, we know Haimi entered North Dakota after two hours had elapsed during the trip, and drove for the next six hours in North Dakota (D/R = T — 360/60 = 6). Therefore Haimi drove in North Dakota for greater than two hours and for less than eight hours. —B

Question 10: Looking at the graph, the growth rate, in millions of cells, per milliliter of water was between 5 and 6 days. —B

Question 11: Make x the original cost of the meal; therefore, with a 20% discount 14.00 equals .8x — solve for x: 14 = .8x or 14 = 80x/100. Now, to solve for x, divide each side of the equation by 80/100, which is the same as multiplying each side of the equation by 100/80, which equals (100/80)(14/1) = x therefore x = 17.5 —B

[REMEMBER WHEN YOU ARE IN ADDITION/ SUBTRACTION LAND STAY THERE. HOW DO YOU KNOW YOU ARE IN ADDITION/SUBTRACTION LAND? BECAUSE YOU WILL SEE A PLUS OR MINUS SIGN. BUT WHEN YOU SEE AN INTEGER OR FRACTION CONNECTED TO A VARIABLE, AND YOU WANT TO ISOLATE SAID VARIABLE, YOU MUST DIVIDE OUT THE VARIABLE BY MULTIPLYING BY THE RECIPROCAL OF

THE INTEGER {PLACE A 1 UNDER INTEGER TO TRANSFORM INTO A FRACTION.}]

[WHEN DEALING WITH PERCENTS, START WITH 100. WHEN YOU INCREASE BY A PERCENT, ADD THE INCREASED AMOUNT TO 100. WHEN YOU DECREASE BY A PERCENT, SUBTRACT THE DECREASED AMOUNT FROM 100. FOR EXAMPLE, IF 70 IS FIRST INCREASED BY 15% THEN DECREASED BY 10%, WHAT IS THE RESULTING VALUE? NEVER EVER ADD 15% THEN SUBTRACT 10%, LEAVING AN ADDITION OF 5%—THAT IS NEVER THE RIGHT ANSWER: INSTEAD, (70)(1.15) = 80.5 THEN (80.5)(.9) = 72.45. HOWEVER, (70)(1.05) = 73.5 — THE INCORRECT ANSWER.

Question 12: Go to the graph, knowing that it is always better to search for a positive than to search for a negative, turn the negative intentionally confusing question into a positive question. Turn the question of how many of the 16,000 bottles cannot be sold, into a positive question by looking for the number of bottles of water in the graph that can be sold: Those that are less than 19.8 fluid ounces and more than 20.2 fluid ounces, remembering as an added intentionally confusing aspect, you need to take frequency into account in your calculations here: There is one 19.6, zero 19.7, one 20.3, and zero 20.4 bottles of water, for a total of 2/80 {Divide

numerator/denominator by 2 equals 1/40.}. Now, set up an equation to cross-multiply: 1/40 = x/16,000
16,000 = 40x 16,000/40 = x x = 400 —C

Question 13: [The y-intercept is where the x coordinate is 0; the x-intercept is where the y coordinate is 0.] Here, we need to manipulate the values in the chart which represent coordinate points of line f. [Recall: In coordinate geometry letter outside parentheses is name of line, value inside parentheses is x coordinate, and value it equals is matching y coordinate.]. Here, we must manipulate provided coordinate points into the equation of a line: y = mx + b (Where m and b are constants in the equation of line f, and m represents the slope of line f and b represents the y intercept of line f. Once you have the equation of any line, all the coordinate points along that line must fit into the equation of a line.)

Step One: In order to ascertain the Slope of the line, grab two coordinate points from the chart: (-2,8) (3,-7) Employ Slope Formula: (y(2) — y(1)) / (x(2) — x(1))

SLOPE IS ALSO RISE/RUN OR VERTICAL/HORIZONTAL. THE REASON WHY THE FORMULA UTILIZES y(2) AND y(1) ABOVE x(2) and x(1) IS BECAUSE EVEN THOUGH YOU COULD ALSO ASCERTAIN THE SLOPE PLACING (y(1) — y(2)) / (x(1) — x(2)) WHAT YOU CAN NEVER DO,

IN GLEANING THE SLOPE IS TO MIX UP THE x AND y COORDINATES AS SUCH: (y(2) — y(1)) / (x(1) — x(2)).

(-7 — 8) / (3 —(-2)) = -15/5 = -3

[REDUCE FRACTION BY DIVIDING NUMERATOR AND DENOMINATOR BY 3.]

[ALWAYS PLACE NEGATIVE VALUES INSIDE PARENTHESES WHEN SUBTRACTING.]

Now, simple grab x,y coordinate points from the chart, plug into equation of a line, and solve for b:

8 = (-3)(-2) + b
8 = 6 + b b = 2 (y intercept is (0,2))

[SUBTRACT 6 FROM BOTH SIDES OF EQUATION.]
—C

Question 14:

Best Strategy: P.I.A. (Plug in Answer Choices) :

Step One: Underline “$12.00 per meal, … number of meals … 400.” And “$0.50 increase … number of meals … decreases by 10.” “ … price per meal … greatest sales …”

Step Two: Multiply (400)($12) = $4800

Step Three: $16 — $12 = $4 4/.5 = 8 (8)(10) = 80
400 — 80 = 320 (320)($16) = $5,120

Step Four: Compare: $20 — $12 = $8 8/.5 = 16
(16)(10) = 160 400 — 160 = 240 (240(20) = $4800 —A

Question 15: Equation of a line: y = mx + b
(8,14) (1,5) Slope: (5 — 14) / (1 — 8) = -9/-7 = 9/7 = ~1.3
b = ~3.7 —A

[WHENEVER YOU ARE PROVIDED A GRAPH OF A LINE, BEST TO USE DEFINITIVE COORDINATE POINTS TO DISCERN EQUATION OF THE LINE. IF YOU CANNOT LOCATE DEFINITE COORDINATE POINTS, THEN ESTIMATE COORDINATE POINTS.]

Question 16: The equation of a line has four parts: an x,y coordinate point on the line, the slope of the line, and the y intercept of the line. This question is a good illustration of how, knowing this, the test-taker can manipulate the equation of a line and solve the question. For example, here, since we already know f(2) = 10, we already know (2,10) is a coordinate point of line f, but we also know line f has a slope of 3; therefore, in order to obtain the y

intercept, we simply plug these values into the equation of a line: $y = mx + b$: $10 = (3)(2) + b$ $10 = 6 + b$ (Subtracting 6 from both sides of the equation.) $b = 4$ —D

Question 17: Evaluating the question, divide both sides of the equation by 7 [RECALL: MATH PRINCIPLES ARE BOTH ETERNAL AND SYMMETRICAL: WHATEVER YOU DO TO ONE SIDE OF AN EQUATION, YOU MUST DO TO THE OTHER SIDE, NO MATTER WHICH TYPE OF EQUATION YOU ARE TALKING ABOUT—ALGEBRAIC, FRACTION, RATIO, ETC.]. When you divide by 7, you are left with $x + 3 = -2/7$ —D

Question 18: [RECALL: WHEN A SYSTEM OF EQUATIONS QUESTION ASKS FOR VALUE OF EITHER VARIABLE, BEST PROCEDURE IS MANIPULATION, BUT, FOR BOTH VARIABLES, TRY ADDING THE TWO SYSTEMS OF EQUATIONS.]. Here, $3x + y = 15$ —D

Question 19: [MUST REMEMBER IN A GRAPH WHEN THE SAME AMOUNT IS ADDED OR SUBTRACTED, THAT GRAPH IS INCREASING OR DECREASING IN A LINEAR MANNER; HOWEVER, WHEN A VARYING AMOUNT IS ADDED OR SUBTRACTED, THAT GRAPH IS INCREASING OR DECREASING IN AN EXPONENTIAL MANNER.]. Here, in this graph, because each week the amount will be increased by a set percentage, based on a

new amount, the increase will vary each week. For example, [RECALL: ALWAYS START WITH 100 FOR PERCENTS: 3.5% OF 100 = 103.5 THEN 3.5% OF 103.5 = 107.1225, ETC.] —A

Question 20: Carefully read the question—NEVER RUSH THROUGH THE QUESTION—here, we are looking for the number of y values from the scatter plot graph which are less than the line of best fit. [RECALL OUR STRATEGY ABOUT PARAPHRASING THE QUESTION TO TRANSFORM THE QUESTIONS INTO MORE EASILY ACCESSIBLE QUESTIONS.]. Looking at the graph, we can easily identify five y values that are less than the line of best fit —A

Question 21: Carefully read/evaluate each question before answering the question.

Here, f(x) =100 —18x models number of miles Dana has remaining x hours after she starts the race, which means the race is 100 miles long (Plugging this equation into y = mx + b, we know 100 is y intercept—the start of the race where x is 0 hours, and 18 is the slope, meaning every hour, Dana travels 18 miles.). Plug in 2 for x (18)(2) = 36 then 100 — 36 = 64 —D

Question 22: [DISTINGUISH BETWEEN SIMILAR TRIANGLES AND CONGRUENT TRIANGLES REGARDING TRIANGLE SIDE LENGTHS (PROPORTIONAL VERSUS SAME LENGTHS, RESPECTIVELY) AND ANGLE MEASURES (SAME ANGLE MEASURES FOR BOTH SIMILAR AND CONGRUENT TRIANGLES). Knowing these geometry rules, we need the length of side BC to equal the length of side EF, because even though two triangles have the same angle measures, they could be similar triangles, with proportional side lengths —C

Question 23: THIS IS A TRICK QUESTION, WITH ABSOLUTE VALUE YOU CAN NEVER HAVE A NEGATIVE ANSWER —A

[FOR ABSOLUTE VALUE QUESTIONS, YOU MUST DO YOUR COMPUTATIONS INSIDE OF ABSOLUTE VALUE, IF ANSWER IS NEGATIVE, PUT POSITIVE VERSION OF ANSWER; IF ANSWER IS POSITIVE KEEP POSITIVE ANSWER. FOR EXAMPLE $|3 - 7| = |-4|$ ANS. IS 4. ANOTHER VERSION: $|x - 3| = 5$ WHAT IS THE SUM/ DIFFERENCE/PRODUCT OF THE SOLUTIONS: NO MATTER YOU MUST ALWAYS DO THIS: $x - 3 = 5$ AND $x - 3 = -5$ FIRST EQUATION — $x = 8$ SECOND EQUATION — $x = -2$. THEREFORE, WITH A QUESTION LIKE THIS, QUESTION SHOULD ALREADY BE EQUAL

TO THE POSITIVE VERSION SO MAKE QUESTION EQUAL TO THE NEGATIVE VERSION AND SOLVE.].

Question 24: Simple factoring of quadratic:
(3x — 2)(x + 1) = 0 3x — 2 = 0 3x = 2 x = 2/3
x + 1 = 0 x = -1 Convert -1 into -3/3 + 2/3 = -1/3 —B

Question 25: Whole — Unshaded = Shaded Just as: Whole — Shaded = Unshaded In this question, 36pi represents the area of the whole circle; therefore, 18 represents the area of the square. Area of a square is s (side) sq'd; therefore sq root of 18 equals lengths of the side of the square. [TO SIMPLIFY SQUARE ROOTS: STEP ONE: LOCATE LARGEST 'PERFECT SQUARE' (1, 4, 9, 16, 25, etc.) WHICH DIVIDES INTO THE NUMBER. HERE, WE HAVE (9)(2) = 18. STEP TWO: TAKE SQUARE ROOT OF PERFECT SQUARE: 3. STEP THREE: COMBINE ANSWERS: sq root of 18 = 3 sq root 2.]
To answer the question of perimeter: (4)(3 sq root 2) = 12 sq root 2 —C

Question 26: Use Simple Factoring:
(x sq'd — 4)(x sq'd — 4): Now, employ simple factoring to factor (x sq'd — 4)(x sq'd — 4) =
(x — 2)(x + 2)(x — 2)(x + 2) = (x — 2) sq'd (x + 2) sq'd —C

Question 27: You need to take the provided information and manipulate into an equation, remembering that working with percents, start at 100, when you increase, add to 100 the increased percent amount, when you decrease, subtract from 100, the decreased amount. Here we start at 500 and every year we increase by 2.5%. This is an exponential function/equation [FUNCTION AND EQUATION ARE INTERCHANGEABLE.], with x representing the number of years. Add 2.5% to 100% equals 102.5%, turn into a decimal: 1.025 —B

[YOU COULD ALSO P.I.N. (PLUG IN NUMBERS). TAKE 2.5% OF 500 AND ADD TO 500 OR MULTIPLY (500)(1.025) SAME ANSWER: 512.5. NOW, SUBSTITUTING 1 FOR x BACK INTO ALL ANSWER CHOICES, ONLY ANSWER CHOICE B EQUALS 512.5.].

Question 28: Evaluate two equations, simply multiply top equation by -12 and it transforms into the bottom equation; therefore, there are an infinite number of solutions —D

Question 29: [RECALL: SAT LIKES/REWARDS FLEXIBLE TEST-TAKERS; ABHORS/PUNISHES INFLEXIBLE TEST-TAKERS.]. For this question, employ strategy of P.I.A. (Plug In Answers). Go to Ans Choice A) Plug in 40 for T and solve: 2.875. Now plug in 100 for T and solve: -1/60 (100 — 40) + 2.875. (-1/60)(60/1) + 2.875 = 1.875. [RECALL: ALL THROUGHOUT THE SAT (ESPECIALLY SECTION 1 READING TEST) ONE ANSWER IS CORRECT, THE OTHER ANSWERS ARE INCORRECT PERIOD.]. Therefore, the correct answer is: —A

Question 30: Use P.I.N. : Start with 100 books: (100)(1.3) = 130. (1.3)(100) = 130 —C

Question 31: Need common denominator: Convert 3/5 to 9/15 by multiplying numerator and denominator by 3. [RECALL: IN MATH WHATEVER YOU DO ON ONE SIDE OF AN EQUATION (OR TO THE NUMERATOR/ DENOMINATOR IN A FRACTION OR EACH SIDE OF A RATIO WHICH CAN ALSO BE RE-WRITTEN AS A FRACTION, YOU MUST DO TO THE OTHER SIDE.] 9/15 + 1/15 = 10/15 Therefore fraction who did not like comedies is 5/15 reduce to 1/3 [RECALL: TO REDUCE DIVIDE NUMERATOR/DENOMINATOR BY SAME INTEGER.] (1/3)(240/1) [RECALL: TRICK TO QUICKLY MULTIPLYING LARGE NUMBERS: DIVIDE NUMERATOR/ DENOMINATOR FROM FIRST FRACTION INTO

NUMERATOR/DENOMINATOR FROM SECOND FRACTION.] Here, 240/3 —80

Question 32: To find y intercept, plug in 0 for x:
y = 3 (x power) + 9 = 1 + 9 —10

[RECALL: ANY VALUE TO THE 0 POWER ALWAYS EQUALS 1; WHEREAS ANY VALUE TO THE POWER OF 1 EQUALS ITSELF, AND IN A FRACTION EXPONENT, NUMERATOR IS THE POWER, DENOMINATOR IS THE ROOT. FINALLY, A NEGATIVE EXPONENT MEANS RECIPROCAL:

5/4 (negative 2/3 power) STEP ONE: DEAL WITH NEGATIVE PART OF EXPONENT. HERE, THE RECIPROCAL OF 5/4 IS 4/5. NOW DEAL WITH THE NEW FRACTION EXPONENT: cube root of (4/5) sq'd

Question 33: [RECALL: SIMILAR TRIANGLES HAVE PROPORTIONAL SIDE LENGTHS, SAME ANGLE MEASURES; CONGRUENT TRIANGLES HAVE THE SAME SIDE LENGTHS AND ANGLE MEASURES. ALSO, RECALL WE HAVE 3-4-5 AND 5-12-13 RIGHT TRIANGLES, AND ALL MULTIPLES THEREOF.]. In triangle ABC, divide the three side lengths by 6, and you get 3-4-5.

Sine—Opposite/Hypotenuse
Cosine—Adjacent/Hypotenuse
Tangent—Opposite/Adjacent

Cosine of Angle C is 24/30; therefore, Cosine of Angle F —4/5

Question 34: Median: [STEP ONE: EVEN OR ODD NUMBER OF NUMBERS {MAKE SURE YOU TAKE INTO ACCOUNT FREQUENCY IN CALCULATING THE NUMBER OF NUMBERS FOR MEDIAN. WITH AN ODD NUMBER OF NUMBERS, DIVIDE BY 2 AND ROUND UP: 5/2 = 2.5, USE THIRD VALUE FOR MEDIAN; WITH AN EVEN NUMBER OF NUMBERS, DIVIDE BY 2 AVERAGING THAT NUMBER AND THE NEXT HIGHER NUMBER TO GLEAN THE MEDIAN: 12/2 = 6, AVERAGE THE SIXTH AND SEVENTH VALUES. STEP TWO: PLACE VALUES IN ASCENDING ORDER AND STOP AT MEDIAN NUMBER(S).]. Here, 9/2 = 4.5; therefore, use the fifth value. Now, place values in ascending order, stopping at the fifth value: 204, 536, 575, 628, 863, 958, 1197, 1904, 3087–WASTE OF TIME TO LIST ALL THE VALUES. STOP AT 863, THE FIFTH VALUE —863

Question 35: Equation of a line: y = mx + b From the graph, we know b is 4. Now, ascertain the slope: y(2) — y(1) / x(2) — x(1) Grab two definite coordinate points from the graph of the line: (0,4) (5,0) (0 — 4) / (5 — 0) = -4/5 Finally, plug in (2,c) into the equation of the line, solving for c: c = (-4/5)(2) + 4 c = -8/5 + 4 [CONVERT 4/1 INTO A FRACTION WITH A DENOMINATOR OF 5 BY MULTIPLYING NUMERATOR AND DENOMINATOR BY 5 PRODUCING 20/5.]. c = -8/5 + 20/5 —12/5 or 2.4

Question 36: Using the chart, weight of the typical African elephant, in tons, is 2.5. Now, convert tons to pounds by multiplying (2.5)(2000) —5000

Question 37: Turn percent questions into a statement. Here, 70 is what percent of 60 (“Is” means equals and what means x.). Therefore, 70 is what percent of 60— 70 = (x/100)(60) Now, divide both sides of the equation by 60 and Cross-Multiply: 70/60 = x/100 60x = 7000 Divide both sides by 60: x = 7000/60 therefore —16.6

[IF THE QUESTION ASKS PERCENT INCREASE/ DECREASE USE PERCENT INCREASE/DECREASE FORMULA: CHANGE IN AMOUNT/ORIGINAL AMOUNT TIMES 100. FOR EXAMPLE, TIM BOUGHT A CAR LAST YEAR FOR $55,000 THIS YEAR THE CAR INCREASED IN

VALUE TO $75,000. WHAT IS THE PERCENT INCREASE: 75,000 — 55,000 / 55,000 TIMES 100 [ALSO, NOTICE, BECAUSE LATER VALUE IS GREATER, CHANGE IN AMOUNT ADJUSTS ACCORDINGLY TO 75,000 — 55,000 = 20,000 / 55,000 = 2.75 TIMES 100 EQUALS 275% THEREFORE THE PERCENT INCREASE IN THE CAR'S VALUE WAS 275%.

Question 38: [RECALL IN COORDINATE GEOMETRY LANGUAGE, THE LETTER OUTSIDE THE PARENTHESES IS THE NAME OF THE LINE, THE LETTER INSIDE THE PARENTHESES IS THE x COORDINATE, AND WHAT IT EQUALS IS THE y COORDINATE.]. Here, the chart provides us with three (x,y) coordinate points in line f: (2,106) (3,151) (4,196)

Choose two of these coordinate points to grab the slope: (151 — 106) / (3 — 2) = 45/1 Now, plug any of the three coordinate points into equation of a line: $y = mx + b$ $196 = (45)(4) + b$ $196 = 180 + b$ Subtract 180 from both sides of the equation, —16