

Errata for all Tests from February 12, 2022 Regional

Algebra 1 Individual:

Question #1 was switched from A to E in all regions. The question asks for “which of the following” in a list of given expressions is an integer given that k is an integer. The original intended answer was C; however, that choice only holds true if k is non-negative ($k \geq 0$). If k is negative, choice C is a non-integer. This makes the correct answer E) NOTA. The answer key was changed to reflect this prior to uploading it to the FAMAT test bank.

Question #2 was erroneously disputed from C only to C or D in Region 2 only. This dispute is not valid because the expression in choice D does not hold true if $k = 0$, which is a real number.

Question #13 was disputed from A to D or E in Region 1 only. This dispute is actually valid when one considers that the question is asking for the “point P_0 ” which is, strictly speaking, an ordered pair and none of the choices are ordered pairs. Choice D was likely accepted since it is the y-coordinate of the desired point, P_0 ; however, this is still not a “point” per se. In fairness, if one was to accept D, the y-coordinate, then the intended choice of A, the x-coordinate, should have been accepted as well. Otherwise the only truly correct choice is E) NOTA since none of the given choices are ordered pairs.

Question #14 was disputed from C or E in Region 1 only as well likely for the same reasons as #13. However, the question asks for the “new market price P_0 ” this time instead of the “point P_0 ” which could have led to the dispute to E due to the inconsistency in verbiage with the previous question.

No changes were made to the above two questions or their solutions prior to uploading the files to the FAMAT test bank since only one region successfully disputed the two questions and since there is enough room for interpretation with respect to the “point P_0 .”

Geometry Individual:

Question #6 was thrown out in Regions 4 and 5, switched from C to C or E in Region 1, and switched from C to E in Region 2. This is because only the sine ratio of angle theta is given and not necessarily the actual lengths of the two sides in the ratio. No Change was made to the test or the key due to the potential for interpretation.

Question #16 was disputed from D to D or E in Region 1 only. The top scoring student on the test was likely the only one to dispute this question as he was the only one in the region to choose E. This is possibly because, strictly speaking, the “actual area” of the square under the microscope does not change while only the “appearance” of the area does. If this is the case, then it would have been better handled by giving this one student a unique interpretation.

Algebra 2 Team:

Question #11 defines a function as increasing on an open interval yet the solution uses closed interval notation. Thus, for the given definition of increasing, the correct final answer is $(4, 7)$ and not $[4, 7]$. This change was made to the answer key prior to uploading it to the FAMAT test bank.

Algebra 2 Individual:

Question #5 was disputed from B to A in all regions due to a typo in the original answer key. The correct answer of $39/8$ is choice A and not choice B. This change was made prior to uploading the test to the FAMAT test bank.

Precalculus Individual:

Question #5 was thrown out in Regions 2 and 5 and disputed from B to B or E in Region 1. There was no key change in Region 4. The question should have asked for “the equation of a directrix” of the ellipse and not for “the equation of the directrix” of the ellipse since an ellipse has two directrices. The wording of the question was changed to reflect this prior to uploading the test to the FAMAT test bank.

Question #11 was disputed from B to E in Regions 2, 4, and 5 yet was left as B in Region 1 due to the fact that only six students answered the question at all with only the top student answering B anyway. The correct answer, however, is E) NIOTA. The reason is because $\cos(\theta)$ is always positive on the interval $(-\frac{\pi}{2}, \frac{\pi}{2})$ and so $\sin(\theta)$ must be positive as well putting θ in $(\frac{\pi}{4}, \frac{\pi}{2})$. This puts 2θ in the second quadrant and so $\cos(2\theta)$ is negative. This makes the final answer $\frac{-\sqrt{7}}{16}$ and not $\frac{\sqrt{7}}{16}$. This change was made to the answer key before uploading it to the FAMAT test bank.

Question #26 was disputed from A to E in Regions 2, 4, and 5 but left as A in Region 1. The vector of coefficients of a plane is orthogonal to the plane, and vectors perpendicular to it are not perpendicular to the plane itself. Therefore, the correct answer is E) NOTA. This change was made in the answer key and solutions document prior to uploading them to the FAMAT test bank.

Calculus Team and Individual:

Two errors were caught and corrected on the team test and one error was caught and corrected on the individual test prior to administering the tests. One small typo remains in the solution to Team Question #11: the expression $h = 3/1 = 1$ should be $h = 3/3 = 1$ in the last line of page 5 of the solutions document.

Statistics Team:

The solution to Team Question #11 had a small typo. The word CLUSTER has 7 letters and not 8 letters, so the $8!$ in the solution should be $7!$. This changes the final answer to 226,800. This change was made to the solutions document prior to uploading it to the FAMAT test bank.

Statistics Individual:

Question #16 was disputed from B to B or D in Region 5 only. The term “response bias” was deemed a sufficiently general term so as to include any form of an attempt to bias the responses in a survey. The argument made in the successful dispute was that since a Twitter poll of all of the surveyor’s followers was conducted, this would inherently bias the results towards the response that they thought the surveyor wanted. Given that this is sufficiently open interpretation, no change was made to either the test or the answer key prior to uploading them to the FAMAT test bank.

Question #30 was thrown out in Region 5 only. This was because the question only stipulates that the probability distribution described in question #28 is required to answer the question but it fails to specifically stipulate that the probability calculated to answer question #29 is also required to answer question #30. Since question #30 cannot be answered without this value, it was deemed a flawed question. It is likely that no sufficiently articulate dispute was submitted in any other region; however, throwing the question out is consistent with the updated Statistics test writing standards and common disputes document, making it the correct decision. The flaw in the question was corrected prior to uploading the test to the FAMAT test bank.