

All regions except Region 1 received and implemented the following changes in time for the contest:

**Algebra 1 Individual question #13:**

A small "box" appears between the "3" and the "x" in the first line. It should read  $3 \cdot x$  or simply the multiplication of  $3x$ . The same issue appears in the solution document.

Here is a screenshot of the corrected question and the corrected solution:

13. When  $-x^2 + \frac{1}{3} - \frac{1}{18} \div \frac{1}{9} + 3 \cdot x$  is evaluated for  $x = -1$ , the result is  $\frac{a}{b}$ , in reduced fraction form, and  $a < b$ . Give the value of  $a + b$ .
- A. 5                      B. -7  
C. -11                    D. -19  
E. NOTA

13. D.  $-(-1)^2 + \frac{1}{3} - \frac{1}{18} \div \frac{1}{9} + 3 \cdot (-1) =$   
 $-1 + \frac{1}{3} - \frac{1}{18} \div \frac{1}{9} - 3 = -1 + \frac{1}{3} - \left(\frac{1}{18} \div \frac{1}{9}\right) - 3$   
 $= -1 + \frac{1}{3} - \frac{1}{2} - 3 = \frac{-2}{3} - \frac{1}{2} - 3 = \frac{-7}{6} - 3 =$   
 $-\frac{7}{6} - \frac{18}{6} = \frac{-25}{6}$ .  $\frac{a}{b}$ , and  $a < b$ , so  
 $a + b = -25 + 6 = -19$ .

**Precalculus Individual question #30:**

The question asks for three "positive integers"  $a$ ,  $b$ , and  $c$  yet  $a = 0$  is one of the integers required in the solution, which is not a positive integer. Therefore, the words "positive integer" in the question should get replaced with "non-negative integer." Here is a screenshot of the incorrect question that needs to get changed, accordingly, so as to match the intended solution:

30.  $f(x) = 12e^{x-1}$  has inverse function  
 $g(x) = f^{-1}(x) = \ln(x + a) - \ln b + c$ .  
 $a$ ,  $b$  and  $c$  are positive integers.  
Give the value of  $a + b + c$ .
- A. 15                      B. 14  
C. 13                      D. 12  
E. NOTA

30. C.  $f(x) = 12e^{x-1}$  has inverse  $x = 12e^{y-1}$   
and  $y = \ln\left(\frac{x}{12}\right) + 1$ . If this equals  
 $\ln(x + a) - \ln b + c$ . then  $a=0$ ,  $b=12$ ,  $c=1$   
and  $a + b + c = 13$

Please create an errata page to include in each test proctor packet and inform all proctors of these small changes so that they can announce them to the room prior to beginning the time for each test.

Please note that disputes of these two questions based upon the above two minor flaws should no longer get accepted.

**NOTE:** The above changes were made to these two tests prior to their posting to the FAMAT test bank.