Answer on Question #79051 – Math – Algebra

My answer is D) I and II only.
Indeed. Consider all three cases.

1) C - ? if F + 1
   C = 5/9 * (F - 32)= 5/9* F – 160/9
   C+x = 5/9 *(F + 1)- 160/9

   5/9* F – 160/9+x=5/9 *(F + 1)- 160/9
   5F – 160 + 9x = 5F – 155
   9x = 5
   x = 5/9

So we can see that a temperature increase of 1 degree Fahrenheit is equivalent to a temperature increase of $5/9$ degree Celsius – it's true

2) F - ? if C + 1
   C = 5/9 * (F-32)
   5/9 * F = C + 160/9
   5F = 9C + 160
   F = 9/5 C + 32
   F + x = 9/5* (C + 1) +32
   9/5*C + 32 + x = 9/5*C + 9/5 + 32
   x = 9/5
   x = 1.8

Thus, in this case we see that a temperature increase of 1 degree Celsius is equivalent to a temperature increase of 1.8 degrees Fahrenheit - it's true

3) And in the end we'll check the third statement: A temperature increase of $5/9$ degree Fahrenheit is equivalent to a temperature increase of 1 degree Celsius.
   C - ? if F + 5/9
   C = 5/9 * (F - 32)
   C+x = 5/9 *(F + 5/9 -32)
   5/9 * (F - 32) + x = 5/9 * (F + 5/9 -32)
   5F – 160 + 9x = 5F + 25 – 160
   x = 25/9,
   so the statement is false.

Answer: D) I and II only.