

Suppose you work on the same math problem three times and get the same wrong answer. Looking at the answer key may help you correct your mistake, but it may not improve your accuracy next time. To learn from the mistake, read through your solution and inspect each step. Mark the point where your mathematical reasoning went wrong, and decide whether the error resulted from a misunderstanding of a concept, a sign error, a wrong formula, or a rushed calculation.

This kind of analysis matters because each cause needs a different correction. A misunderstanding can often be cleared up by

asking a teacher ~~/~~ a quick question, which may also
deepen your grasp ~~of~~ the topic, whereas a rushed
calculation simply calls for slowing down ~~//~~ A good
diagnosis identifies the root cause ~~and~~ suggests
one practical action ~~to~~ prevent the same mistake
~~from~~ happening again ~~//~~

Next, cross out the faulty line ~~in~~ your
calculation, rewrite it, ~~and~~ retrace your reasoning
~~from~~ the beginning ~~//~~ However, do not simply
check off each step ~~and~~ move on. Instead, try
your corrected method ~~on~~ a similar algebra
problem ~~without~~ looking at your notes ~~//~~ A method
that seems clear ~~on~~ paper may not work so well
~~in~~ practice, and this test may reveal another
shortcoming, ~~such as~~ relying on your notes ~~for~~ a

step/you cannot yet do/on your own//

Assess whether the new method improves
your results, and work out why it succeeds or
fails//A new error may point to a deeper problem
and guide your next revision of the method//If
you fail to examine the process/ the true cause
may remain hidden behind a corrected answer//A
repeated mistake can make you feel miserable,
but you can bounce back by treating it as a signal
to inspect your work/more closely//After all, the
goal is not just to fix one answer but to learn what
each mistake can teach you.

A:

I've finally figured out why I made a mess of that calculation //

B:

Good for you! What was the problem?

A:

I was rushing through the equation, so I wrote a plus sign instead of a minus //

B:

How will you stop that from happening again? //

A:

I'll slow down and circle every minus sign as I write it //

B:

That sounds like a practical step // Let's see if it works on the next problem //