HARMONY PRELIMINARIES

1) KEY SIGNATURES

How many keys are there? Let's stick to the keys which actually have a key signature, and you should see that there are 15 possible key signatures: from 1 to 7 sharps, plus 1 to 7 flats, plus "open key" (no sharps or flats). BUT: each signature can stand for both a major and a minor key, so the total is 30.

The order of sharps. In the key of C# major we have a signature of 7 sharps. We need to learn this first, since all the other sharp keys are but an incomplete version of it.
The sharps appear in this order: F C G D A E B (Father Christmas Gave David An Empty Box).
To write a given sharp key, remember a simple rule: **The last sharp is te**. "Te" as in "Lah te doh". In other words the last sharp in a key signature, reading from left to right, is the Leading Note of the key (7th note of the scale). So, here's your calculation:

> You want the key signature for B major? Right, then B is the tonic (doh) so A must be te. The last sharp will be A, so the sharps are F C G D A. Easy, eh?

The order of flats. The order of flats in the key of Cb major is precisely the reverse of the sharps: B E A D G C F (Battle Ends And Down Goes Charles' Father – reference to beheading of Charles 1st!)
To write a given flat key, the rule could be: *The last flat is fah* but this is a little awkward perhaps, so try **The last but one flat is doh.**

> So for the key of Db major we write the flats in order, up to the tonic note (BEA**D**) and then add one more (G). now the rule works.

That doesn't cover the key of one flat, though, Come on, you can remember that as key of F, surely? And of course the key of C is no flats or sharps. So you have to remember two key signatures and two rules.

Wait a minute! *That's 15 key signatures as you said earlier. But on the piano there are only 12 notes, so what's going on?*
Yes, <u>on the piano</u> there has to be some sharing (Cb = B, C# = Db, F#=Gb). They are not equal, actually, in for example vocal and orchestral music, and certainly not equal in theory, which is what we are studying. The scale of F# consists of these notes: F# G# A# B C# D# E# whereas the scale of Gb is: Gb Ab Bb Cb Db Eb F. They certainly look different on paper (and properly performed, are at two very close, but nonetheless different pitches).

Another question: *To write in the key of so-and-so, how do I know whether it's a sharp or flat key?*
Good question, with an easy answer. You already know C and F, OK? For the rest, if you get flat in the name, or sharp in the name, (e.g. Ab, or F#) then it's obvious. That only leaves A B D E G (the only remaining plain letters apart from C and F. Answer: they're all sharp keys.

What about minor keys?
The water gets a little deeper here. Be clear first that every key signature stands for two keys, one major, one minor. To discover which, one must study the actual music. Solving that particular problem is not our concern here; we just need to know how to write and read key signatures.

Again, reference to the solfa scale is useful. First, clear your mind of any thought that the minor scale starts on doh, with inflections like maw and law. Ugh! It's illogical anyway. No, the minor scale starts on lah. Now it's fairly simple. Take four sharps for example; we already think of this as the key of E, right? Just go down the scale doh te lah and you land on C, right? Wrong, it's C#, isn't it? So four

sharps is also the key of C# minor. Another example: Five flats is Db major, so the minor must be two notes lower, i.e. Bb minor.

I get that. Now, how do I write a minor key signature, given its name, say E minor?
Yes, that's a little harder. You can use either of two methods:

Method 1. Three semitones up. Visualising the piano keyboard, go up three semitones from E and you get G, which (from above rules) is one sharp (F).
Hang on – that was easy, but what about F minor? I go up three semitones and I don't know whether to call the note G# or Ab!
Yes, you do: how can it be any sort of G? That's only one step from F. We're going up lah te doh, remember, so it must be an A of some sort, in this case Ab.
Hmm…. What's the other method?

Method 2. Three flats more than the major of same name. To take the same two keys we just used, F minor will have three flats more than F major, which has one flat. So four flats: BEAD.
I get that, but why didn't you take E minor first?
Because it's confusing to add three flats to a key with four sharps – I have to tell you here that **three sharps less is the same as three flats more.** So E major has four sharps, therefore E minor will have one sharp.
What about 2 sharps? I mean D major has two sharps, how do we do D minor?
Do I really have to spell this out? Take off your two sharps, now add one flat to make up the three. So one flat gives D minor; you can see its relationship to F major, can't you?
I wish I hadn't asked.

Summary
There are 15 possible key signatures, each standing for one major and one minor key, so 30 keys altogether. Sharps are FCGDAEB, flats are BEADGCF.
The last sharp is te. The last but one flat is doh.
Minor scales begin on lah; their key signatures have three flats more, or three sharps less, than the major key of same tonic.