"P" Theory Made Simple?

Pythagorean tuning is used is barbershop singing primarily because our arrangements are written around the musical scales of the Circle of 5ths. On the other hand, a piano is said to be justly tuned, or equal temperament, which means every pair of adjacent notes has an identical frequency ratio. The octave is divided into a series of equal steps. Since our songs are arranged around the Circle of 5ths, P Theory is needed to accurately tune a chord.

In equal temperament, a written octave would be equally spaced:

Do Re Me Fa So La Ti Do

In barbershop, a written octave would look like this:

Do Re Me Fa So La Ti Do

Note: In barbershop, the 3rd, 6th and 7th of the key are sung on the high side of the note.

When using P Theory, notes can have both positive and negative values. Sometimes you will hear a director or coach say "Add onion skills to that note." or "Sit on that note or make it a dirty note. Knowing how to recognize when and where P-Theory plays a part in the arrangements you are singing. With it you can develop a higher level of tuning your songs, which equals higher scores. Accidentals also play a big role in accurate tuning as well. (Accidentals: ♭ ♯♮) If an accidental raises the note from what it is in the key signature, the note is sung high. If an accidental lowers the note from what is in the key signature, the note is sung dirty.

Flat Key Signature
- ♯ notes are sung on the high side.
- ♮ notes are sung on the high side, if they are notated as flat in the key signature.
- ♭ notes are sung dirty, if they are NOT flat in the key signature.

Sharpe Key Signature
- ♯ notes are sung on the high side, if they are NOT sharp in the key signature.
- ♮ notes are sung dirty, if they are notated as sharp in the key signature.
- ♭ notes are sung dirty.

There is a sequence to flats & sharps and they run exactly opposite of each other!

Sequence of Flats: B E A D G C F

Sequence of Sharps: F C G D A E B

Note: The more accidentals there are in a chord, the harder it is to tune.

Finding the Key

Flat signatures - Key is the next to last ♭ note in the signature.
Sharp signatures - Key is a half step up from the last ♯ in the signature.

Chart for finding the Key and the 3rd, 6th & 7th
The Key of the song is often referred to as "Do"

Key Signature	Root/Key	3rd	6th	7th
None	C	E	A	B
1 ♭	F	A	D	E
2 ♭	B ♭	D	G	A
3 ♭	E ♭	G	C	D
4 ♭	A ♭	C	F	G
5 ♭	D ♭	F	B ♭	C
6 ♭	G ♭	B ♭	E ♭	F
1 ♯	G	B	E	F ♯
2 ♯	D	F ♯	B	C ♯
3 ♯	A	C ♯	F ♯	G ♯
4 ♯	E	G ♯	C ♯	D ♯
5 ♯	B	D ♯	G ♯	A ♯
6 ♯	C	E ♯	A ♯	B ♯

Bonus Tool – How to find the root of a specific chord. See Addendum #1.