Click The Formulas

Time limit: 5.0s   **Memory limit:** 256M

My friend wants you to check out some of his osu! replays. He's used encoded the ids of each of the replays in a separate message. Hopefully the first one will help you understand the rest.

You might think this problem is the same as one of Nick Wu's 2022 PacNW problems; *even an angel can end up falling* for that one. However, for this problem you'll need to append an extra S to the end of the song name.

```
SELIIFIIOIFLJAGJEYKKEEAEHLWHHEALIJOEAHEEEELHITLTETUEFIJJAIEILUEILERAEEAEALIDOLAULAIHUEOIOHUEEG
UIEILELIAITAGWIAILHEDAHEATPLEHAEEHEEITHEEWITFDLEIEYPILEAIEATLPAHILALELAEHEUEIHEAELAIEFIFAYIILJ
IEYTIAIEAHEEILEEFYAIETLEEOEFTAOEETIWALGTLAHATIAILEAEEAELEAROADELTIIEIEGIHALAIFIAHIIEEEILGALHTE
LIKOAWGLKHIAIKLIAHLOLHWAHFEEWIATIIALEELILAPHEEELLFIEYKEAEFOFEAIEDAKALEATIALALALEALALAHIEAFEALA
EAEALLKLEAEAIIAEALATAIIKAEAHAIAUAIAKAIUAEAIAELAIATAJAIAWRAHEAEAUAEAIAIAIIAEAHAYGAHAIAFAIAGALIA
IIAFAEAIHAPEELLTEAYAWAEAEAPAEJETAHAGATWATRLALYOTEJKODGPKNPULYKOYUOQYOULIJFQGDVHQDBTNWHBVBRJKRE
UOUOUFMDPKSPXOBZCZNGQOYNFQFD
```

Yet another play with couple of misses on this song a is making me feel a little sad. But after playing a little more, I'm feeling up and *slowly learning that life is okay*. Maybe after watching the replay you'll feel the same way.

```
TAKAUERWONEIEAKIKWEEAOHEKAEKSEEANEAEREEMMKEAPFNAEKNMMMDNKMPEEEOYOAMOAEAEKMKMNOSLEOELOUFIMENOEO
EOEOOEEAERDENUAYAKWAKMFNAEFMOHENNIEDAMENEAKESKMWKYOAOEAENEEAENKAOOGEEEYOEFNAOAIYEHKOAYPHEMOJEK
NREWIEEHAEYEEEAEAOEKEOKAJIOOANIMHMAKEOAWOEOOUEHMEEEMOMAGOEAEAGPSINGROEENDKALELNADSEYOOEEKANMKM
JEPOWEPANWAKOEARAMKMNAEMKAMEPWWMEEEIKNAEMSOANAOKEKIEEOENMWUEAMAEEOWNKEAEAMNIEPOKPEAKJOKROMEEOU
EAHOOALEAKOEEAEAMJAKLDKNMPEPANOMNWKMKKNEKKOEEOMEANKEKNAOEEGMYNOLPEKAYOKWDALEANNEKDENLKKKOKMOYM
AKOKEKKGOOAFEKPOREAEMAROELNEFOMJEEENMEEOANAESKNKSWDERAKOSEAPJEKSEJKKYOEAKONMNKEPEEEUWDOMNOGEEE
OIMWMWKOEUOJKHSEPSJOFYNDYMEL
```

You fall asleep at night, and you begin to have nightmares. *[The author of this problem] is chasing you. The truth is hard to swallow* (the truth being that your nightmares might just be the lyrics to a song).

```
SEHOOFJEPNHTTETFFERPYHYKPHPTRIRJNEHKAERRRRFPTTLEEERERRPNRWUJWWRYLAKREJGOOERADEAORKEYREIKGRKJED
EKGJEEFERDRTOWNLEEEYEWHEIYPIEYEEHDGNLNTDDRTDETJUEEIINLRERGTRRRRNRNEENEAOEUEKEDAEJRRRUHUEUEEEOR
JARUDYLUFEUYAPURENEWWIERHPFFIAUJFUWRYRIYUNUERDEOEERRJRYURULNEHUGRRTFREFUNRERFUEUNEPEHUPRRIRGGJ
UELUHOFWEURULUAUJREUDPUFURYUEEFUEURURUEEAEUTULYUNURJPRRUEEUYTUKJGUEURLURUOGUEEYUEUREUOERTRGUEU
TPEUYRRURURTRUJRGRRLKEUYURYUERRUEIUYGEUDUOUYUEIFUODUEFPOEDRLUPURURJKUPUREUGNFKUTUTEJUEERIUIUYU
EEUETAULWUPUORYIRWMJPCYCFKLGLMAFGGGMKYPLJRFFFGIAFMJPELYANWYLGDPAFEPFARMTGCCIWFWLPHAFWILACLJCFA
GAMIGJYMAECJPYTHFRWFCWONCCJE
```

I spent a long time trying to get a full combo on this song. I used to say I *never was a quitter* except now I have to kinda have to because I ran out of time.

```
TOOLOTDOTOHEOARSOOEEIOEALLIOLIOOKEHEKELDEOEKOIHALKOOEEOLHLHOHIOILEKAIKEHULOKOIEKHOIELKTKTEOOLT
HLGOOEOIOOILKHELLEATOAEOKEAIAKTEEOIOEAKOIOIKOOETOLLOEEIILKEETLAWEAHOEEJELOITLOEEOKLHTLLILLLDOA
TYOLOHHOHKLEHSSJOTHLHLAIKOOALLOLOLELELIOLAOHOITAETHDOEOHRHIEOHOIEOLOOLOHAIRLKOOKTEAEEOROAKISOL
LHETUHETEILEOLHHETLAAEHIOHLHOOLLOEKEELLEAEIOKAEELLEHLTHEKOOKHITLEOHOEEOHSKLTKOOEEAOEIOEIAAIKEO
OEHHOOOLEOOIUOAIOLKOLOEHLYLLHAOELOTHOHLKEIFEIKILOOEOUAEAYIHIOTHTAAIOHOAOTEATIEKHEEKOOLOTLEILET
HKHIHOHTHTKTEOOTOTKTIOLTUOTKLTATITKETLOETILTLTIOITEAEOTOKTLTILTHETIAHIEUWGOJBAPOWRIPAOPIOOKKDF
SYKYKFGRSKUYHEYULNSOAIOCWYKP
```

If I had gotten a Full Combo, this play might be considered *eighty years ahead* of it's time. As it stands this play is just OK.

```
UOBBFEMBOMIIUNJJMBEMMMTAEOBIHYHBMIMAGIABHEFBIIMMMMERAEMEMHBTEBABATMTIGBEUEMBAMAKOIKBTBAUTBMBOW
ESBTMTEBBMOTOAMBRIFBTMHDBNWBAMMMIMWMRBMUESOESROUUMOMOMONDDAIOUNERMYSMMAMHINTAHTBEMHOOIMOKAOMAI
DGMBHEEOUMBUMOBABGEDMEMFMOKBEUMRABYOHTMBJEJYGEJBAMEAYMOUBOIBMMBTETEEBWMBIMMMIATENJHIFOEMEBTJMM
OBMEOEBTAYATMIBEUTIMAJTBMTBMKBAIOBJBOMTRJMEATIMKIIMMMTMEBBAATRUMNTAEIRAMABIMRMTWITEMAOTENTEMWT
MITEOTMTBTBMTABNEBEIBWBTIBTUOBORHTBWMTYOIMOBMRETYJTADUFBTBTUTOEWMETEATETAEHTMIMFTAIIIBIMWEYTMS
MTIMWMNKTMAETBBOMMAUNTIBKBMBTEETMSUTBIMBTMAIOMYNNEEMEMTOMHIIWEKAMAKEEYEMIETBETETOIAELWWYUCIGRN
MAYJDDPNLJELNDDGUBOCMUJWWNBN
```

Using the digits obtained from watching each of the replays, you should be able to find an infamous play. Now what should you do with it...

Note: To get a replay from the osu! website, go to 'osu.ppy.sh/scores/[id]' and click download.

Output

Output a single string consisting of upper case letters. The string can contain at most 592 characters.