00:00:05.170 --> 00:00:07.158
Alright, in this video what we're going

00:00:07.158 --> 00:00:09.907
to do is find the greatest common factor

00:00:09.907 --> 00:00:12.087
of these three expressions and remember

00:00:12.087 --> 00:00:14.359
a factor is anything that I can sort

00:00:14.359 --> 00:00:16.220
of evenly divide into this expression.

00:00:16.220 --> 00:00:19.477
So A is a factor of each one of these

00:00:19.477 --> 00:00:21.424
expressions, and two is a factor of

00:00:21.424 --> 00:00:23.670
each one of these expressions, right?

00:00:23.670 --> 00:00:24.950
'cause 2 divides 18,

00:00:24.950 --> 00:00:26.858

two divides 12, two divides 30.

00:00:28.920 --> 00:00:31.916
Five is a factor of this one.

00:00:31.920 --> 00:00:33.260
Because five divide 30,

00:00:33.260 --> 00:00:35.638
but it's not a factor of these

00:00:35.638 --> 00:00:38.275
other two and what I want is I want.

00:00:38.280 --> 00:00:39.612
The greatest common factor.

00:00:39.612 --> 00:00:41.277
So in a certain sense,

00:00:41.280 --> 00:00:43.471
that's the most that I can pull

00:00:43.471 --> 00:00:45.940
out of each one of these things,

00:00:45.940 --> 00:00:49.330
and the way to do it.

00:00:49.330 --> 00:00:50.137
Is like this.

00:00:50.137 --> 00:00:51.213
Probably these things are

00:00:51.213 --> 00:00:52.758
going to be given to you,

00:00:52.760 --> 00:00:54.790
like in a list and you can just start by

00:00:54.842 --> 00:00:56.717
organizing them vertically like this,

00:00:56.720 --> 00:00:58.655
and then you want to look at the numbers

00:00:58.655 --> 00:01:00.460
and think well what's the greatest

00:01:00.460 --> 00:01:02.000
common factor for those numbers.

00:01:02.000 --> 00:01:04.248
You could stop and and write down their

00:01:04.248 --> 00:01:05.430
prime factorizations on the side.

00:01:05.430 --> 00:01:06.494
That might be helpful,

00:01:06.494 --> 00:01:08.657
and in that case you're going to be

00:01:08.657 --> 00:01:10.449
doing stuff that's very much like this,

00:01:10.450 --> 00:01:12.658
A squared and B thing we're

00:01:12.658 --> 00:01:15.009
going to do in a second.

00:01:15.010 --> 00:01:18.162
But you should check that the greatest common

00:01:18.162 --> 00:01:21.108
factor of those numbers is 6 and Y six.

00:01:21.110 --> 00:01:24.332
Well, 6 divides 18 and it leaves behind A36,

00:01:24.340 --> 00:01:27.116
divides 12 leaves behind a two and six

00:01:27.116 --> 00:01:30.085

divides 30 and leaves behind A5 and three,

00:01:30.090 --> 00:01:31.164
two and five.

00:01:31.164 --> 00:01:32.954
They have nothing in common,

00:01:32.960 --> 00:01:33.992
no common factors,

00:01:33.992 --> 00:01:37.218
so six is the most that I can pull

00:01:37.218 --> 00:01:39.773
out of each one of those numbers,

00:01:39.780 --> 00:01:42.286
and then how about here with as,

00:01:42.290 --> 00:01:46.380
so what's the most I can pull out of there?

00:01:46.380 --> 00:01:47.810
Is just one a right?

00:01:47.810 --> 00:01:48.946
Because in the second

00:01:48.946 --> 00:01:50.366
expression there's only one a.

00:01:50.370 --> 00:01:52.281
So here I could pull out two

00:01:52.281 --> 00:01:54.358
and here I can pull out two.

00:01:54.360 --> 00:01:56.070
So A squared is a common

00:01:56.070 --> 00:01:57.210
factor between these two,

00:01:57.210 --> 00:01:58.902
but a squared is not a

00:01:58.902 --> 00:02:00.350
factor of this middle guy.

00:02:00.350 --> 00:02:02.758
So essentially just look at this column

00:02:02.758 --> 00:02:04.950
and choose the smallest of these

00:02:04.950 --> 00:02:07.491
exponents and just write down here hey.

00:02:07.500 --> 00:02:08.770

And then same thing here.

00:02:08.770 --> 00:02:10.548

So actually it's exactly the same here,

00:02:10.550 --> 00:02:12.833

it's just that the B is up here, right?

00:02:12.833 --> 00:02:14.604

So B squared is a factor here.

00:02:14.610 --> 00:02:16.164

B squared is a factor here

00:02:16.164 --> 00:02:17.659

and then here it's only B,

00:02:17.660 --> 00:02:20.600

so the greatest common factor there is.

00:02:20.600 --> 00:02:22.860

B.

00:02:22.860 --> 00:02:24.234

And that's the greatest common factor

00:02:24.234 --> 00:02:25.620

of those three things we're done.