$$\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}$$

We can imagine this as the first element leaving x and z alone, and setting y to 0. Additionally, we can imagine the second one setting x to 0 and leaving y and z alone. We need to worry about getting enough elements from the kernel so we can generate the whole ring.

We have a set of powers that will be invariant no matter what:

- x^p
- y^p
- z^p

The trick is to use this trick to lower exponents in the kernel.
We also know that in the kernel we can consider:

$$xyz^{p-1}$$

So we have that:

$$g_0 : xz^{p-1}$$
$$g_1 : xy^{p-1}$$

If we look at our roots of unity, we see that the total powers of each group action will result in a total order of p, so our root of unity $\mu^p = 1$.

Because they are all multiples of this first invariant and we can generate the entire invariant ring.

CLAIM: If we look at the $x^2y^2z^{p-2}$, it will also be invariant because the total order will be p.