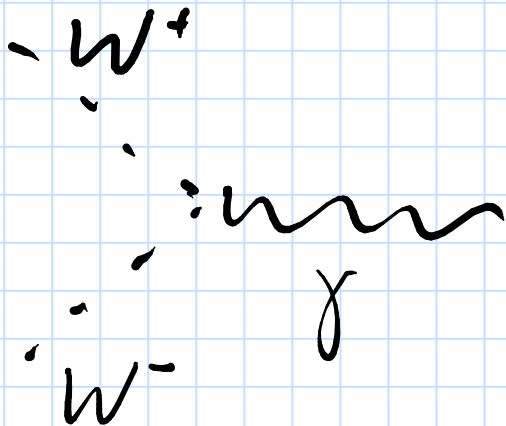


( $Z$ -couplings are complicated but it's approx.  $g_W$ )



$$g_e = \sqrt{4\pi\alpha} = e$$

$$\hat{\alpha} = 1/137$$