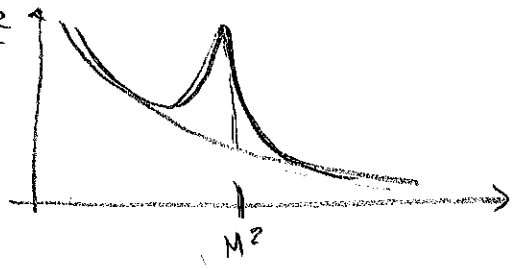
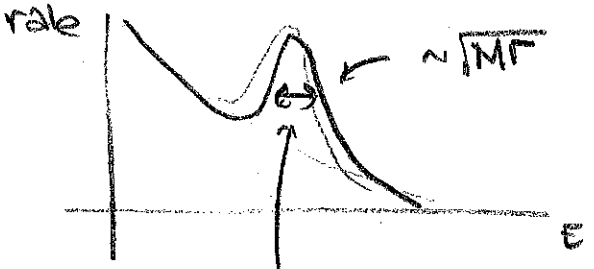
1. 

$\sim$ 100 GeV

X 2. RATE $\sim \left| \frac{1}{p^2 - M^2 + iM\Gamma} \right|^2 = \frac{1}{(p^2 - M^2) + M^2\Gamma^2}$



(SORT BECAUSE OF UNITS)

$(M\Gamma)^2$ controls the width of this bump

$M\Gamma \sim (10\ \text{GeV})^2$

3. $\Gamma_{PDG} = 2.5$ GeV

not bad.

$2.5\ \text{GeV} \times 100\ \text{GeV} = 40\ \text{GeV}$

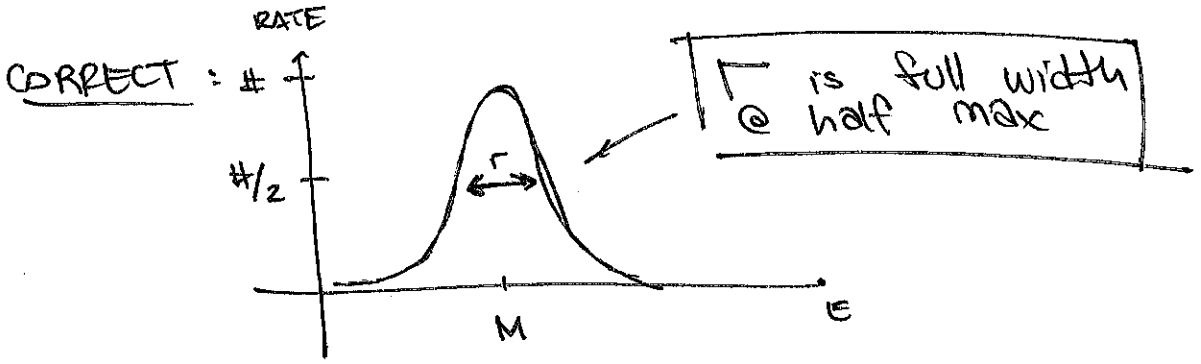
X 4. $[\Gamma] = 1 \rightarrow t = 1/\Gamma$ ← $1/\Gamma$ is a time scale. IDENTIFY IT W/ LIFETIME

$\approx \frac{1}{2.5\ \text{GeV}}$

See ADDENDUM

HW6a ADDENDUM

↳ I TOTALLY LIED.



So my estimate in the orginal HW is totally wrong.

The problem will be graded exclusively on part 1 : sorry!!
> part 3

- Prof. Tanedo