3.5

a) Threshold energy: 885.7 MeV

497.7 MeV

e+p

nu+n->n+nu

->mu+p

->e+p

nu+p->nu+p

b) Pion is 139.6

What energy is needed 794.5 => 140 MeV in p+p

c) Tau = 1784 MeV

needs to be solved analytically

3.12E6: 1785

|  |  |
| --- | --- |
| 3.5 |  |
| Threshold energy | 885.7 |

3.8

Muon

Momentum=0

CM=180deg

Neutrino

Yes at a CM angle of 0, a full momentum sweep yields 180 theta for all

3.12

b) Minimum angle difference of 500 backward c shape

c) what needed to determine angle

-distance between detector and pion

-coordinate system

-more length

-time

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| momentum | 5 GeV | 5000 MeV |  |  |
| cm angle | Angles | gamma1 | angles | g2 (MeV) |
| 180 | 180 | 0.91 | 0 | 5000.91 |
| 90 | 1.5 | 2500.91 | 1.5 | 2500.91 |
| 0 | 0 | 5000.91 | 180 | 0.91 |

Chapter 4