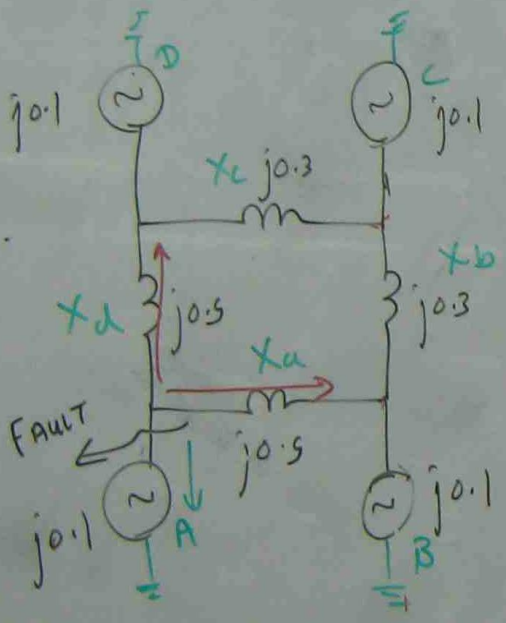
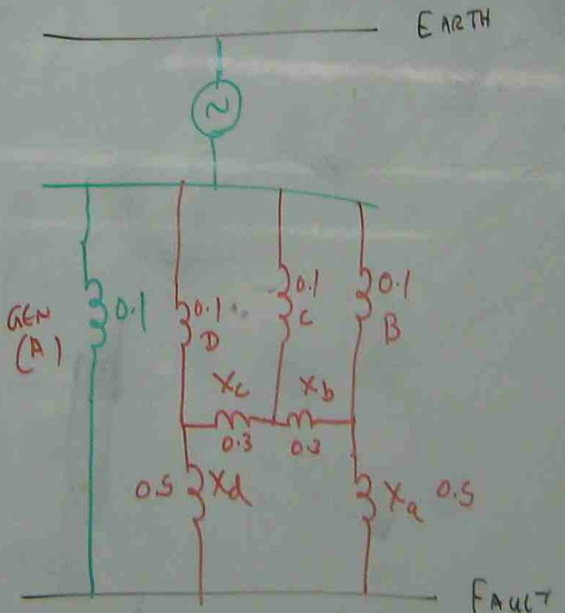
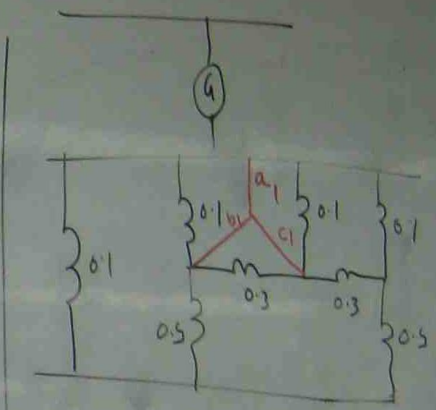
Ph IN THE GIVEN NETWORK, 3φ FAULT OCCURS AT POINT (F)
CALCULATE FAULT M.V.A THE PERUNIT VALUES OF REACTANCES
ALL REFER TO BASE of 100 MVA. RESISTANCE MAY BE NEGLECTED



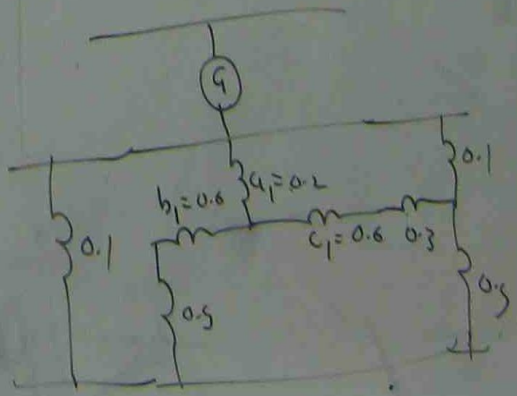


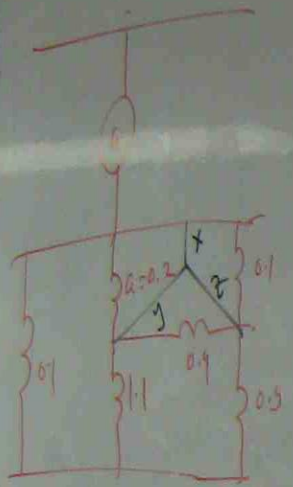


$$a_1 = \frac{0.1 \times 0.1}{0.1+0.1+0.3} = 0.2$$

$$b_1 = \frac{0.1 \times 0.3}{0.1+0.1+0.3} = 0.6$$

$$c_1 = \frac{0.1 \times 0.3}{0.1+0.1+0.3} = 0.6$$

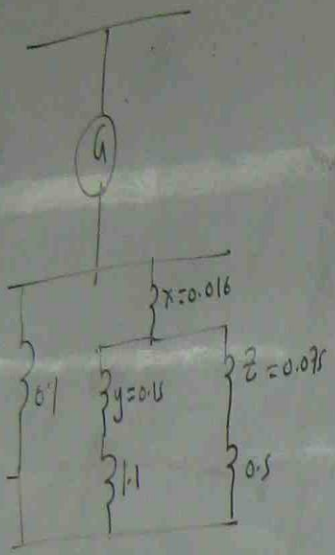


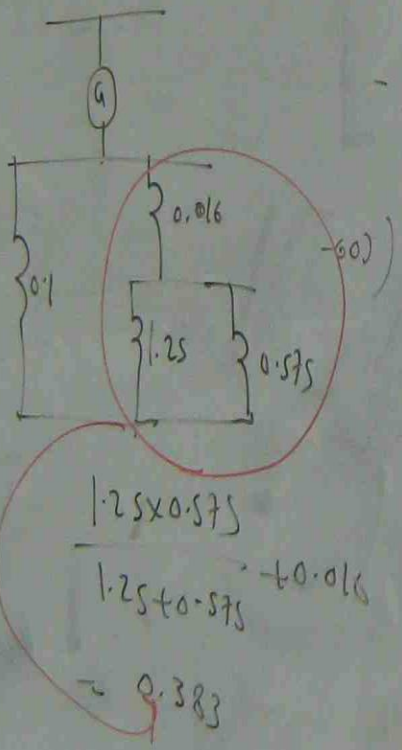


$$x = \frac{0.2 \times 0.1}{0.2+0.9+0.1} = 0.016$$

$$y = \frac{0.2 \times 0.9}{0.2+0.9+0.1} = 0.15$$

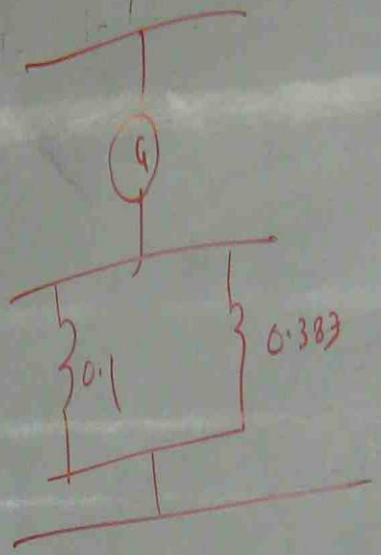
$$z = \frac{0.9 \times 0.1}{0.2+0.9+0.1} = 0.075$$





$$\frac{1.25 \times 0.575}{1.25+0.575} + 0.016$$

$$= 0.383$$



$$0.1 \,//\, 0.383 = \frac{0.1 \times 0.383}{0.1+0.383}$$

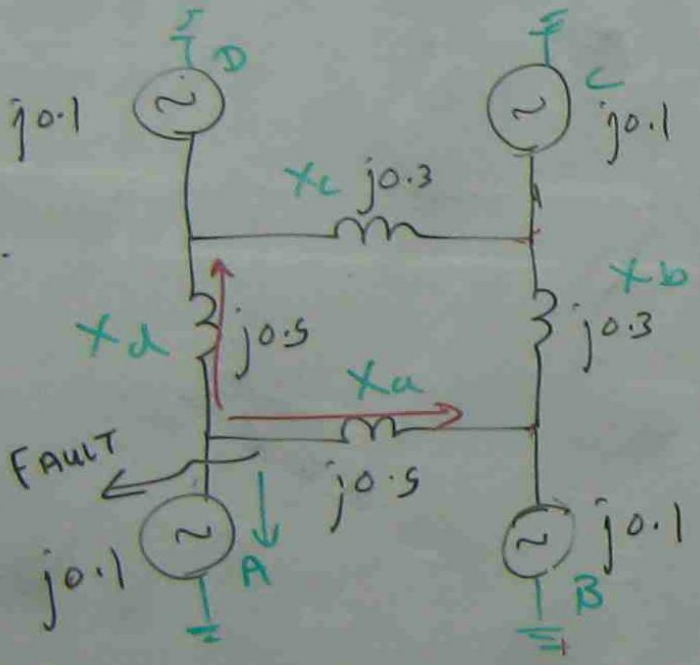
$$= 0.084$$

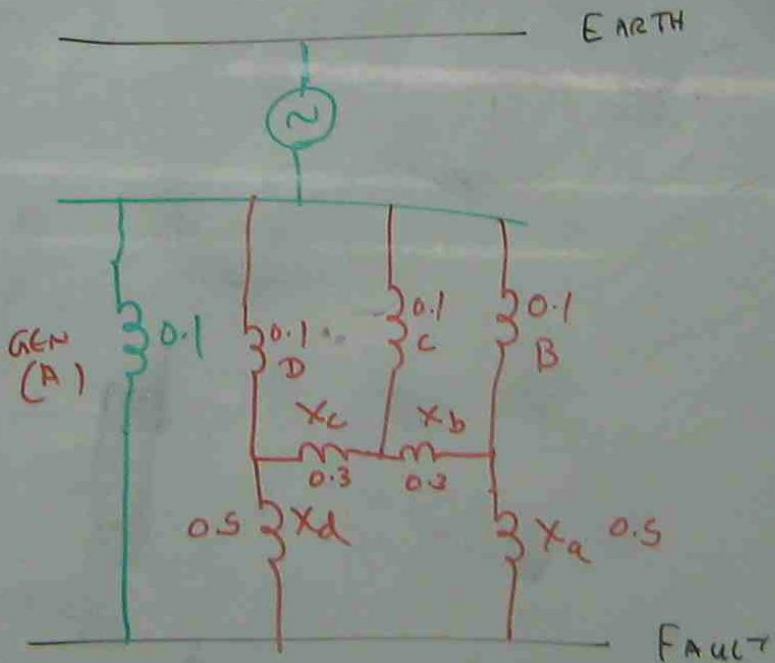
$$MVA_{Sh} = \frac{MVA\ FL}{Z_T} \times 100$$

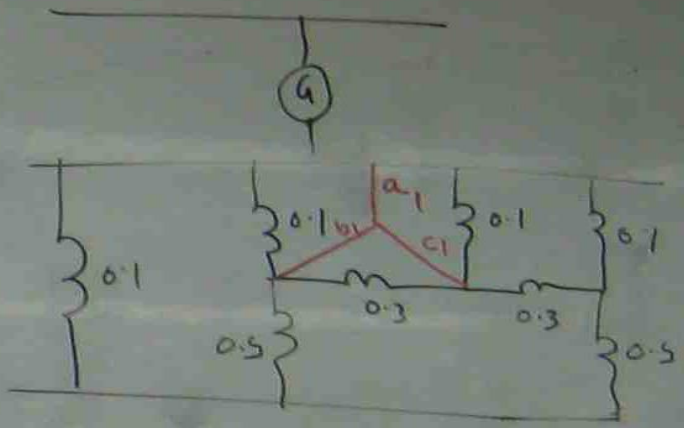
$$= \frac{100}{0.084} \times 100$$

$$= 1190\ MVA$$

Pb IN THE GIVEN NETWORK, 3φ FAULT OCCURS AT POINT (F)
CALCULATE FAULT M.U.A THE PERUNIT VALUES OF REACTANCES
ALL REFER TO BASE of 100 MUA. RESISTANCE MAY BE NEGLECTED







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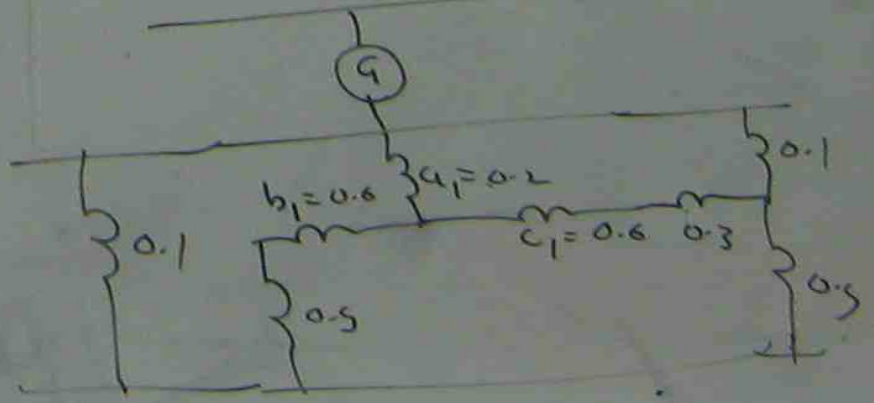
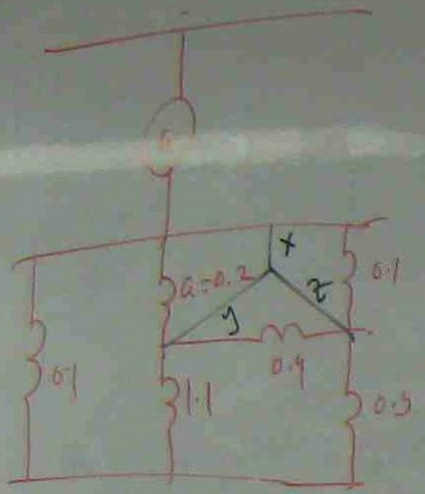
$$c_1 = \frac{0.1 \times 0.3}{0.1+0.1+0.3} = 0.6$$





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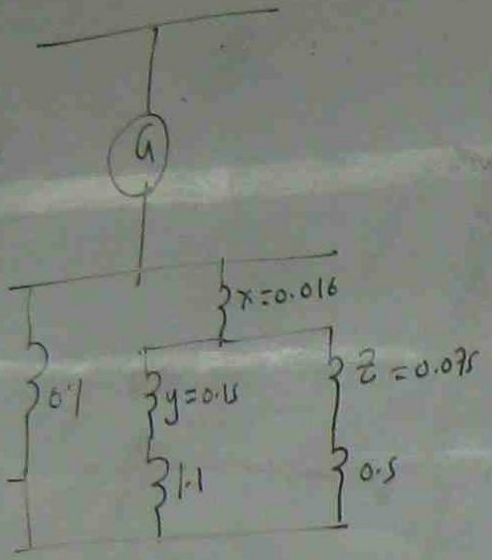
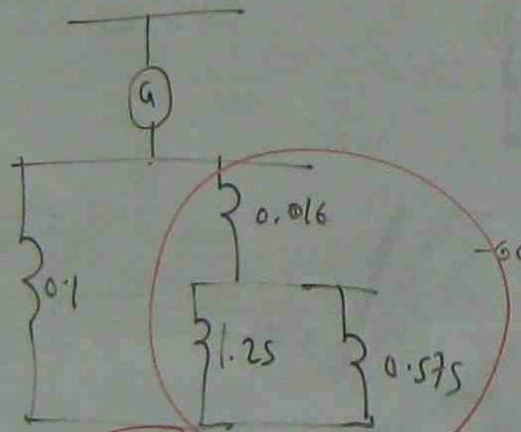
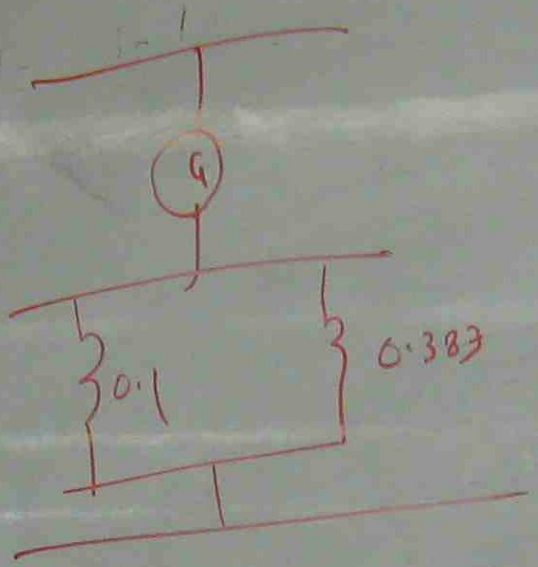




$$\frac{1.25 \times 0.575}{1.25+0.575} + 0.016$$

$$= 0.383$$



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$$= 0.084$$

$$MUA_{Sh} = \frac{MUA\ FL}{Z_T} \times 100$$

$$= \frac{100}{0.084} \times 100$$

$$= 1190\ MUA$$