Find E om & Tan for: -Sm = \int d x \cdot \left 80Sy = S[P+8P]-S[P] $= \int d^{*} \times \sqrt{191} \left[\frac{1}{2} g^{\mu\nu} \partial_{\nu} (\phi + \delta \phi) \partial_{\nu} (\phi + \delta \phi) - \nu (\phi + \delta \phi) - \nu (\phi + \delta \phi) \right]$ = \[\frac{1}{x}\sqrt{\left{9}} \\ \frac{1}{y}\sqrt{\left{1}}\\ \left{\psi}\\ \left{\psi}\\ \left{\psi}\\ \left{\psi}\\ \left{\psi}\\ \left{\psi}\\ \left{\psi}\\ \left{\psi}\\ \left{\psi}\\\ \left{\psi}\\ \left{\ = 2002 m 60 + Ju 60/- Ju 6) v (Taking Jatorday
= 2002 m 60 + Ju 60 p 6 + Jud 60 v 60) = 2 2 p \$ d p \$ p $V(\phi + \phi) - V(\phi) = V(\phi) + \frac{\partial V}{\partial \phi} - \frac{\partial V}{\partial \phi}$ $3895M = \left[\frac{1}{2}x^{\mu\nu}\right]_{\mu}\phi \partial_{\nu}(8p) - \frac{3\nu}{2}\phi = 0$ $= \int d^4 x \sqrt{g} \left[g^{0} \partial_{\mu} \partial_{\nu} P - J V \right] J \phi = 0$ 3. 19 dud 20 = 3V

New, 2 = 1 947 July 1 - V(p) =1 (Si Sp. + SJ Sh)) ~ pp - 1 may 9 gus 2 4) Tur = - du pdy p - 1 g - gurdapp + gurvap b) Sn = - Sd x , Sly Fur Fab guague Fuy = du Ay - do Au. =) Sn = fd x Sigi (du Ay - du Au) (da AB - JB Az) g g y b -) Sp 5m - 5 0 7 J(g) 2) Sp Sp = 50 1/ 5191 (2 m (Av + SAv) -) v (Au + SAM) (2 a (AB + SAB))
- (mAv - 2 v Au) (2 a AB - 2BAar)] gurgus

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Your And - John Sept Du (Ay Jean - Just Au) Fig + Day Sp Sp Shy Fung - Exp For + higher order terms I Xgung up > Idx Jy 2 (dusAy-dy&Au) Fap gurgra] I Using the property that g is always symmetric & replacing (9,B) (U,V) in 2 nd term = 2 Sdx Ngi (Jus Ay - Jus Au) Fapgurgup 22 John Rej Jahr) De Far = Dags Fre grange LTHY = $2 \frac{\partial \mathcal{I}}{\partial g^{\mu\nu}}$ = $2 \frac{\partial \mathcal{I}}{$ = 9 Fr Frp (Sn Sy + Sy Sn) 9 sp] - 9 x y SF guy) - + (Sn Sy + Sp Sn) gr] - 9 x y SF guy) = \frac{1}{2} \fra