$$USS(\text{total}) = \boldsymbol{y}'\boldsymbol{y} = \sum_{i=1}^{n} y_i^2.$$

$$USS(\text{model}) = \boldsymbol{y}'\boldsymbol{X}(\boldsymbol{X}'\boldsymbol{X})^{-1}\boldsymbol{X}'\boldsymbol{y} = \boldsymbol{y}'\boldsymbol{H}\boldsymbol{y} = \sum_{i=1}^{n} \widehat{y}_i^2.$$

$$USS(\text{total}) = USS(\text{model}) + SSE$$

$$CSS(\text{total}) = USS(\text{total}) - SSI$$

$$= \sum_{i=1}^{n} (y_i - \overline{y})^2.$$

$$CSS(\text{model}) = USS(\text{model}) - SSI$$

$$= \sum_{i=1}^{n} (\widehat{y}_i - \overline{y})^2.$$

$$CSS(\text{total}) = CSS(\text{model}) + SSE$$