

MECHANICS - QUESTIONS

$$1 \text{ a) } \begin{array}{c} \rightarrow a \\ 350 \leftarrow \boxed{1100} \rightarrow 1600 \end{array}$$

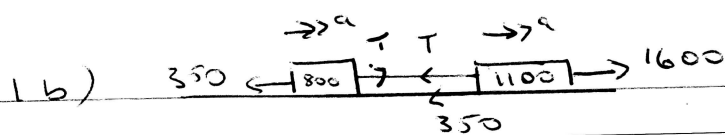
$$[F = ma]$$

$$1600 - 350 = 1100a$$

$$a = 1.136$$

$$\text{accn} = 1.14 \text{ ms}^{-2} \text{ (2dp)}$$

turn \rightarrow
over



$$[F = ma] \quad \text{to find accn.}$$

for car and caravan.

$$1600 - 350 - 350 = (800 + 1100)a$$

$$a = 0.47368$$

To find tension T in the tow bar

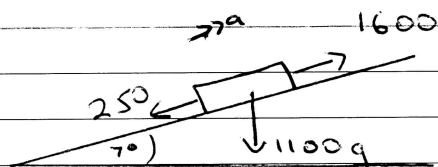
$$[F = ma] \quad \text{for caravan.}$$

$$T - 350 = 800a$$

$$= 800 \times 0.47368$$

$$T = 729 \text{ N (to nearest N)}$$

2.



$$[F = ma]$$

$$1600 - 1100g \sin 7^\circ - 250 = 1100a$$

$$a = 0.03295$$

$$a = 0.03 \text{ ms}^{-2} \text{ (2 dp)}$$