1 **(a)** The list below shows some SI quantities.

Underline the quantity that is **not** an SI base quantity.

<div align="center">charge   current   length   time   [1]</div>

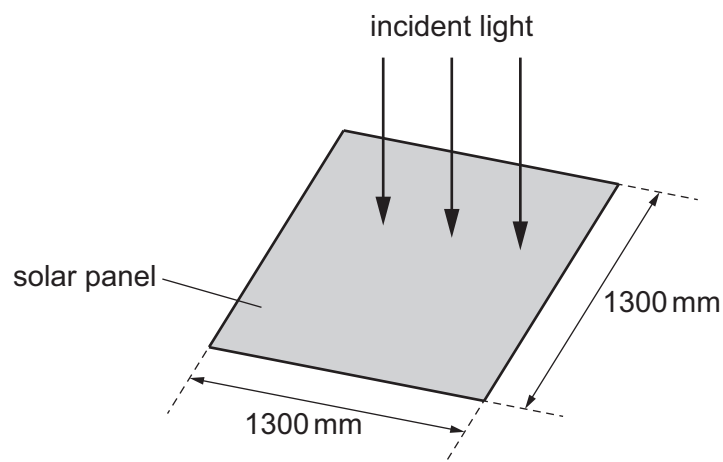**(b)** A square solar panel with sides of length 1300 mm is shown in Fig. 1.1.

incident light

Fig. 1.1 (not to scale)

Light is incident normally on the solar panel.

(i) The power of the light incident on the solar panel is 750 W.

Calculate the intensity of the light.

intensity = ... W m^{-2} [3]

(ii) The percentage uncertainty in the incident power is ±3%.
The uncertainty in the length of each side is ±5 mm.

Calculate the percentage uncertainty in the intensity of the light.

percentage uncertainty = ... % [2]

(iii) The useful power output of the solar panel is 160 W.

Calculate the percentage efficiency of the solar panel.

efficiency = ... % [1]

(iv) Another square solar panel is placed so that light of the same intensity is incident normally on it. The new panel has shorter sides than the original panel. The new panel has the same power output as the original panel.

State and explain whether the efficiency of the new panel is greater than, less than or the same as the efficiency of the original panel.

....

....

....

....

.... [3]

[Total: 10]