

**Data Analysis Task**

A student investigates whether the measured count rate due to a radioactive source follows an inverse square relationship with distance of the detector from the source.

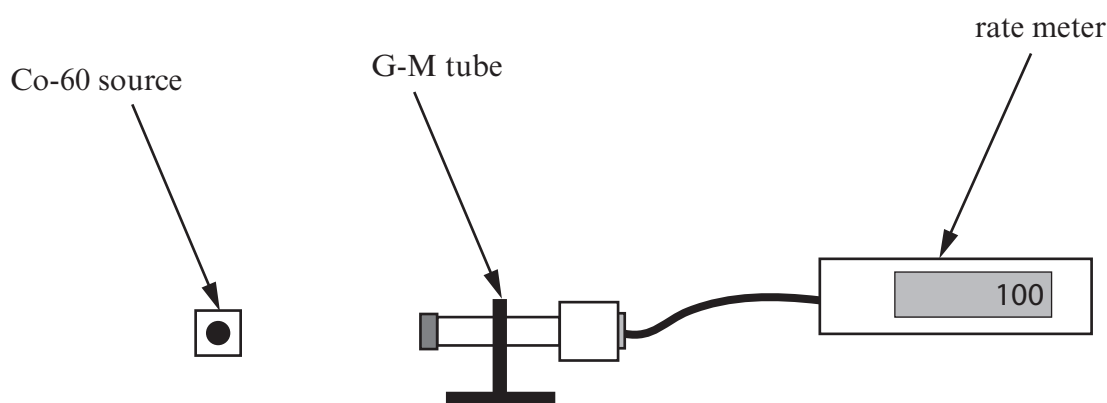
- (a) Describe another physical example where an inverse square relationship is followed. [1]

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- (b) The student uses a cobalt-60 source and a Geiger-Muller tube to measure the count rate due to the source.



- (i) Describe **one** safety precaution when using radioactive sources. [1]

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- (ii) The following table shows the count rate of the source at various distances as measured by the student.

Distance ( $d$ )/mm	Count rate/Bq	$1/d^2$ (      )
13	$215 \pm 8$	
17	$125 \pm 6$	
20	$94 \pm 5$	
25	$59 \pm 4$	
30	$44 \pm 3$	
50	$19 \pm 2$	

Complete the third column including the correct unit.

[3]