MINISTRY OF EDUCATION, SINGAPORE
in collaboration with
CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Level

Excel Reference Guide

for

Physics (Advanced Level)

For use from 2026 in Paper 4 for the H2 syllabus.

This document has **4** pages.

Singapore Examinations and Assessment Board

CAMBRIDGE International Education

1 Relative and Absolute Cell Referencing

initial cell reference (This example uses a reference to Cell A1, entered in Cell B2)	double-click or drag the bottom right corner of cell B2 down the column	drag the bottom right corner of cell B2 rightwards across columns (along the same row)

	A	B	C	D
1				
2		=A1		
3				
4				

	A	B	C	D
1				
2		=A1		
3		=A2		
4		=A3		

	A	B	C	D
1				
2		=A1	=B1	=C1
3				
4				

	A	B	C	D
1				
2		=$A1		
3				
4				

	A	B	C	D
1				
2		=$A1		
3		=$A2		
4		=$A3		

	A	B	C	D
1				
2		=$A1	=$A1	=$A1
3				
4				

	A	B	C	D
1				
2		=A$1		
3				
4				

	A	B	C	D
1				
2		=A$1		
3		=A$1		
4		=A$1		

	A	B	C	D
1				
2		=A$1	=B$1	=C$1
3				
4				

	A	B	C	D
1				
2		=$A$1		
3				
4				

	A	B	C	D
1				
2		=$A$1		
3		=$A$1		
4		=$A$1		

	A	B	C	D
1				
2		=$A$1	=$A$1	=$A$1
3				
4				

2 Excel Functions and Operators

Note that *a*, *b*, *c* and *d* represent numbers or cell references.

Excel function	syntax	examples
SUM	=SUM(a,b,c,d) *OR* =SUM(<cell range>)	=SUM(1,2,3) =SUM(A1,A2,A3) =SUM(A1:A100) =SUM(A1:D200)
AVERAGE	=AVERAGE(a,b,c,d) *OR* =AVERAGE(<cell range>)	=AVERAGE(1,2,3) =AVERAGE(A1,A2,A3) =AVERAGE(A1:A100) =AVERAGE(A1:D200)

mathematical operation	syntax using operators	syntax using Excel functions
$a + b$	=a+b	=SUM(a,b)
$a - b$	=a-b	
$a \times b$	=a*b	
$a \div b$	=a/b	
$(a + b) \times c$	=(a+b)*c	
$\frac{a+b}{c}$	=(a+b)/c	
a^b	=a^b	
$\sqrt{a}$	=a^(1/2) =a^0.5	=SQRT(a)
e^a		=EXP(a)
$\lg a$		=LOG(a) =LOG10(a)
$\ln a$		=LN(a)

trigonometric function	syntax using Excel functions	remarks
π	=PI()	
convert from radians to degrees	=DEGREES(a)	=a*180/PI()
convert from degrees to radians	=RADIANS(a)	=a*PI()/180
sin *a*	=SIN(a)	a is angle in radians
cos *a*	=COS(a)	a is angle in radians
tan *a*	=TAN(a)	a is angle in radians
$\sin^2 a$	=(SIN(a))^2	a is angle in radians
$\cos^2 a$	=(COS(a))^2	a is angle in radians
$\tan^2 a$	=(TAN(a))^2	a is angle in radians
$\sin^{-1} b$	=ASIN(b)	result is angle in radians in range $-\frac{\pi}{2}$ to $+\frac{\pi}{2}$
$\cos^{-1} b$	=ACOS(b)	result is angle in radians in range 0 to π
$\tan^{-1} b$	=ATAN(b)	result is angle in radians in range $-\frac{\pi}{2}$ to $+\frac{\pi}{2}$