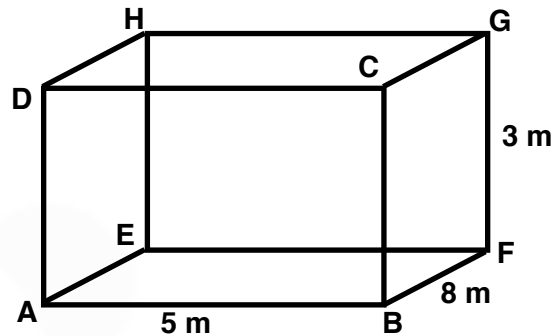


## Graphs of sine, cosine and tangent

### Starter

1. **(Review of last lesson)** In the cuboid,  $GF = 3$  m,  $AB = 5$  m,  $BF = 8$  m. Find:
- the exact length of  $AF$
  - the angle the line  $AG$  makes with the plane  $CDGH$ , to 1 d.p.



### Notes

Your calculator gives  $\sin^{-1}\left(\frac{1}{2}\right)$  as  $30^\circ$ , but is there another angle such that  $\sin x = \frac{1}{2}$  when  $x$  is between  $0^\circ$  and  $360^\circ$ .

**E.g. 1** Copy and complete the table for  $0^\circ$  to  $360^\circ$ , gives values to 2 d.p.

	$0^\circ$	$30^\circ$	$60^\circ$	$90^\circ$	$120^\circ$	$150^\circ$	$180^\circ$	$210^\circ$	$240^\circ$	$270^\circ$	$300^\circ$	$330^\circ$	$360^\circ$
$\sin x$	0	0.5											
$\cos x$	1	0.87											
$\tan x$	0	0.58											

**E.g. 2** Draw the graph of  $y = \sin x$ .  
Use the scales: Horizontal scale: 1 cm  $\equiv$   $30^\circ$ .  
Vertical scale: 4 cm  $\equiv$  1 unit.

**E.g. 2** Draw the graph of  $y = \cos x$ .  
Use the scales: Horizontal scale: 1 cm  $\equiv$   $30^\circ$ .  
Vertical scale: 4 cm  $\equiv$  1 unit.

**E.g. 3** Draw the graph of  $y = \tan x$ .  
Use the scales: Horizontal scale: 1 cm  $\equiv$   $30^\circ$ .  
Vertical scale: 4 cm  $\equiv$  1 unit.

Video: [Sine graph](#)  
Video: [Cosine graph](#)  
Video: [Tangent graph](#)

[Solutions to Starter and E.g.s](#)

### Exercise

From the OCR syllabus "Recognise and sketch the graphs of  $y = \sin x$ ,  $y = \cos x$  and  $y = \tan x$ ."

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|----------------------|--------------------|
| 9-1 class textbook:  | No exercise needed |
| A*-G class textbook: | No exercise needed |
| 9-1 homework book:   | No exercise needed |
| A*-G homework book:  | No exercise needed |