Instructions

Target time:

- Less than 3 minutes.

- Repeat this activity daily until you achieve **100% in the target time on 2 consecutive days**.
- The goal is to answer the questions **quickly** and **correctly**.
  - When you achieve fluency, it will require very little mental effort.

Step 1: Set a stopwatch to time yourself.

Step 2: Answer all questions on lined paper in **timed conditions**.

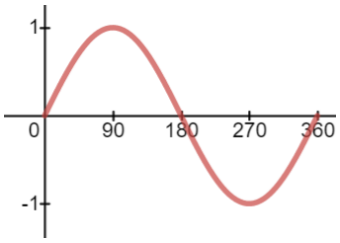
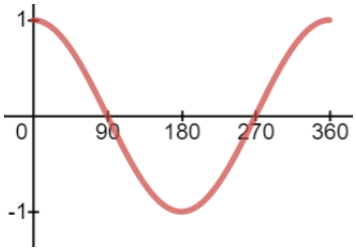
- Guess if you don't know the answer.

Step 2: **Check your answers** using the solutions on the reverse of this page.

Step 3: Fill in one of the marking columns below (enter the date in the heading).

Step 4: Use the solutions to **correct any mistakes**.

	Question							
1.	1 identity: $\sin 2x \equiv \ldots$							
2.	3 identities: $\cos 2x \equiv \ldots$							
3.	Identity linking $\sin x$ and $\cos x$							
4.	2 identities linking $\sec x$, $\operatorname{cosec} x$, $\cot x$ and $\tan x$							
5.	Identity linking $\sin x$, $\cos x$ and $\tan x$							
6.	Symmetry properties for sin and cos (in radians)							
7.	Periodic properties for sin, cos and tan (in radians)							
8.	Graph of $y = \sin x$, $0 \leq x \leq 360$ Label the x-axis every 90°.							
9.	Graph of $y = \cos x$, $0 \leq x \leq 360$ Label the x-axis every 90°.							
10.	Graph of $y = \tan x$, $0 \leq x \leq 360$ Label the x-axis every 90°.							

	Question	Solution
1.	1 identity: $\sin 2x \equiv \ldots$	$\sin 2x \equiv 2 \sin x \cos x$
2.	3 identities: $\cos 2x \equiv \ldots$	$\cos 2x \equiv \cos^2 x - \sin^2 x$ $\equiv 2\cos^2 x - 1$ $\equiv 1 - 2\sin^2 x$
3.	Identity linking $\sin x$ and $\cos x$	$\sin^2 x + \cos^2 x \equiv 1$
4.	2 identities linking $\sec x$, $\operatorname{cosec} x$, $\cot x$ and $\tan x$	$1 + \tan^2 x \equiv \sec^2 x$ $1 + \cot^2 x \equiv \operatorname{cosec}^2 x$
5.	Identity linking $\sin x$, $\cos x$ and $\tan x$	$\frac{\sin x}{\cos x} \equiv \tan x$
6.	Symmetry properties for sin and cos (in radians)	$\sin x = \sin(\pi - x)$ $\cos x = \cos(2\pi - x)$
7.	Periodic properties for sin, cos and tan (in radians)	$\sin x = \sin(x \pm 2\pi)$ $\cos x = \cos(x \pm 2\pi)$ $\tan x = \tan(x \pm \pi)$
8.	Graph of $y = \sin x$, $0 \leq x \leq 360$ Label the x-axis every 90°.	
9.	Graph of $y = \cos x$, $0 \leq x \leq 360$ Label the x-axis every 90°.	
10.	Graph of $y = \tan x$, $0 \leq x \leq 360$ Label the x-axis every 90°.