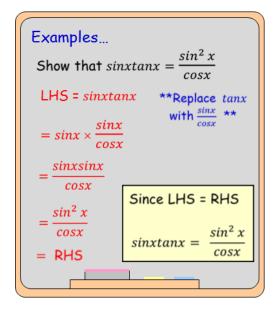
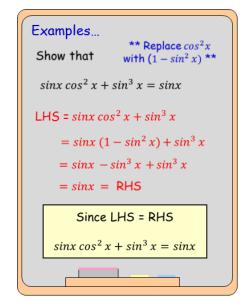
Outcome 2 - Trig identities

Silver example



Gold example



Silver Questions

Prove the following trig identities...

- Show that tanxcosx = sinx
- Show that $\cos^3 x \tan x = \sin x \cos^2 x$
- Show that $tanx + \frac{1}{cosx} = \frac{sinx + 1}{cosx}$
- Show that $\frac{\sin x}{\tan x} = \cos x$ 4

Gold Questions

Prove the following trig identities...

- Show that $\cos^2 x + 7 = 8 \sin^2 x$
- Show that $9 \sin^2 x = 8 + \cos^2 x$
- Show that $\cos x \sin^2 x = \cos x \cos^3 x$
- Show that $\frac{\cos^2 x}{\sin x} \frac{1}{\sin x} = -\sin x$

$$tanx = \frac{sinx}{cosx}$$

$$sin^2 x + cos^2 x = 1$$

and can be re-written as...
 $sin^2 x = 1 - cos^2 x$
 $cos^2 x = 1 - sin^2 x$

Silver Answers

$$\frac{\sin x}{\cos x} \times \cos x = \frac{\sin x \cos x}{\cos x} = \sin x$$

$$cos^3x \times \frac{sinx}{cosx} = \frac{cos^3xsinx}{cosx} = sinxcos^2x$$

$$\frac{\sin x}{\cos x} + \frac{1}{\cos x} = \frac{\sin x + 1}{\cos x}$$

$$\frac{\sin x}{\frac{\sin x}{\cos x}} = \frac{\sin x \cos x}{\sin x} = \cos x$$

Gold Answers

$$= 1 - \sin^2 x + 7 = 8 - \sin^2 x$$

$$= 9 - (1 - \cos^2 x) = 9 - 1 + \cos^2 x = 8 + \cos^2 x$$

$$= cosx(1 - cos^2x) = cosx - cos^3x$$

$$= \frac{1 - \sin^2 x}{\sin x} - \frac{1}{\sin x} = \frac{-\sin^2 x}{\sin x} = -\sin x$$