

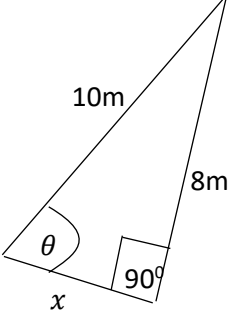
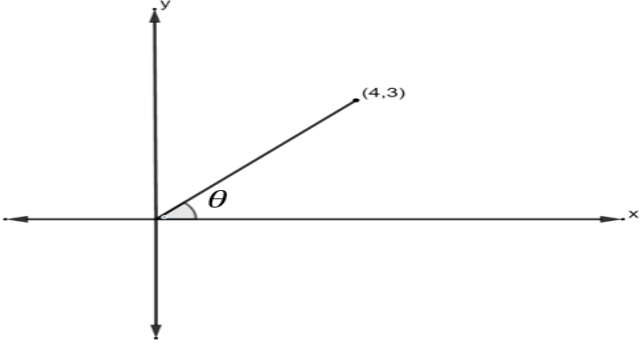
SHARP

Trigonometry Identities

Grade 11 Maths

1. Draw a right-angled triangle $\triangle ABC$. Let $\hat{A}CB = \beta$.
 - Identify the *Opposite*, *Adjacent*, and *Hypotenuse* sides of your right-angle triangle.
 - State the Pythagoras theorem in terms of *Opposite*, *Adjacent*, and *Hypotenuse*.
 - Write the ratio of $\sin \beta$ and $\cos \beta$. For *Opposite side* use (*Opp*), *Adjacent side* (*Adj*), and *Hypotenuse side* (*Hyp*).
 - In $\sin \beta$ make *Opp* a subject of the formula and name it equation (1).
 - In $\cos \beta$ make *Adj* a subject of the formula and name it equation (2).
 - Substitute equation (1) and (2) into the Pythagoras rule and simplify the equation fully.

2. Complete the following table without using a calculator. Leave your answers in surd form where applicable.

	$\theta = 45^\circ$		
$\sin\theta$		_____	_____
$\cos\theta$		_____	_____
$\frac{\sin\theta}{\cos\theta}$		_____	_____
$\tan\theta$		_____	_____

- Examine the last two rows of the table and make a conjecture.

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- Are there any values of θ which your conjecture will not be true?
Explain your answer.
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3. Complete the table below using your SHARP Calculator. Leave your answers in surd form where applicable.

θ	0°	30°	45°	60°	90°
$\frac{\sin\theta}{\cos\theta}$					
$\tan\theta$					

- What do you notice about your answers where θ is 90° ?

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- What can you conclude about that? And why?
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