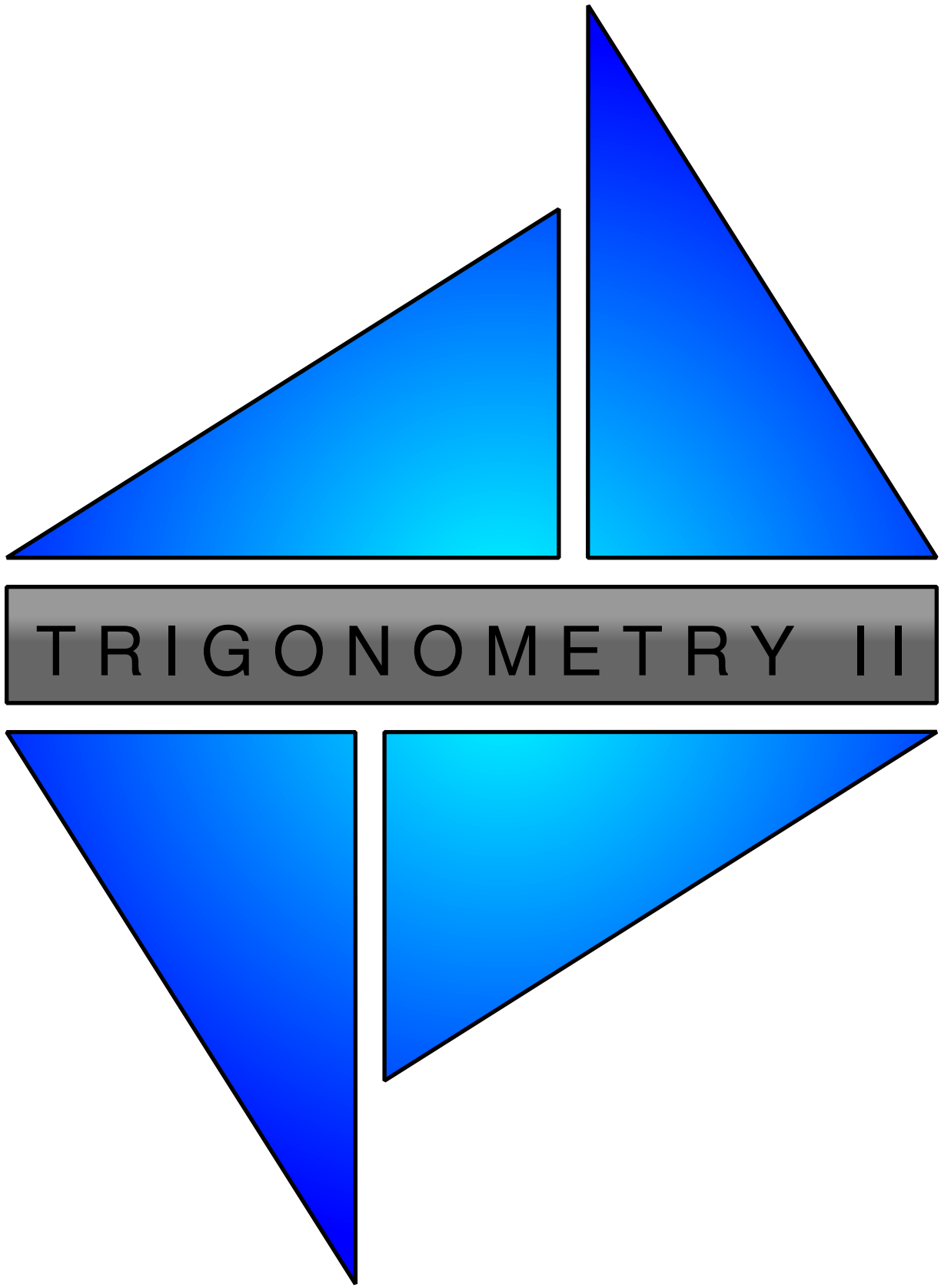

TRIGONOMETRY II

T R I G O N O M E T R Y I I

Calculator needed !

Lesson 1

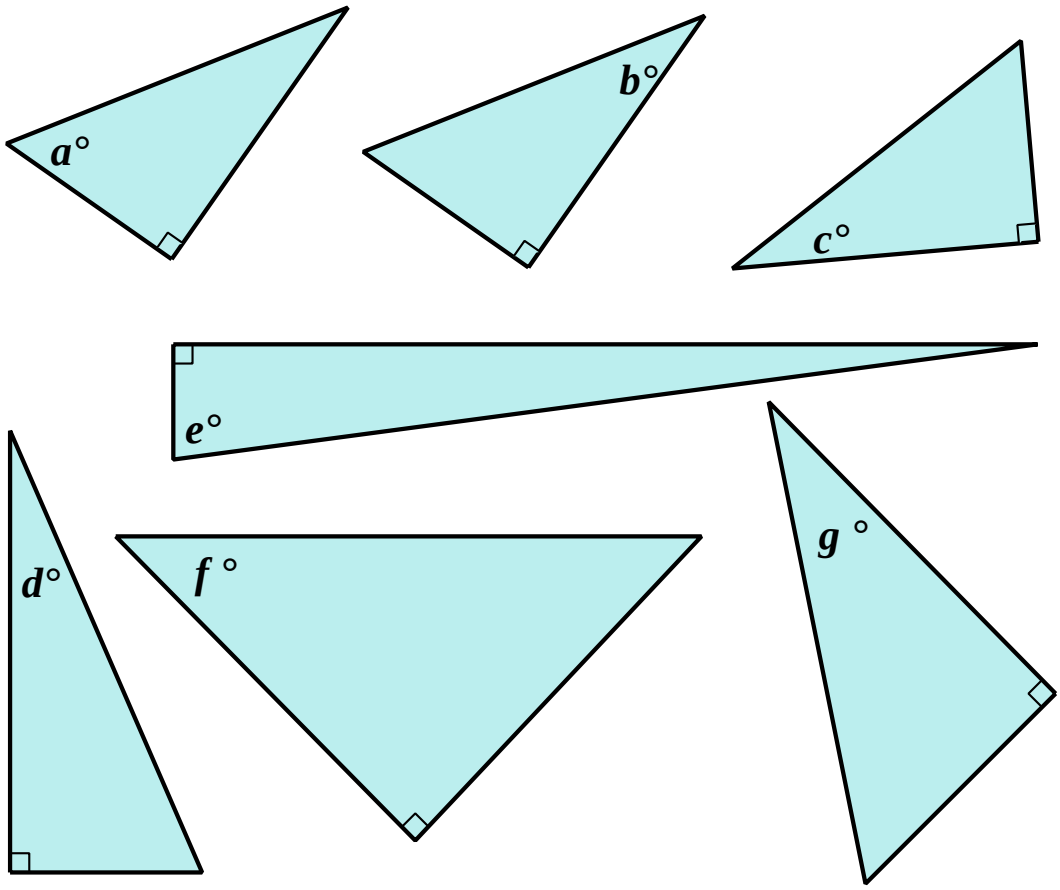
Trigonometry : Year 9

1.1 Labelling

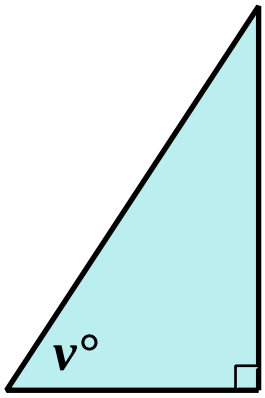
First	*hyp*	Look for the *right-angle*. The *hypotenuse* does not touch the *right-angle*.
Second	*opp*	Look for the *angle-of-focus*. The *opposite* does not touch the *angle-of-focus*.
Third	*adj*	The *adjacent* touches both the *right-angle* and the *angle-of-focus*.

1.2 Starter

Label each of the following triangles with *hyp*, *opp* and *adj*.



1.3 SOH CAH TOA



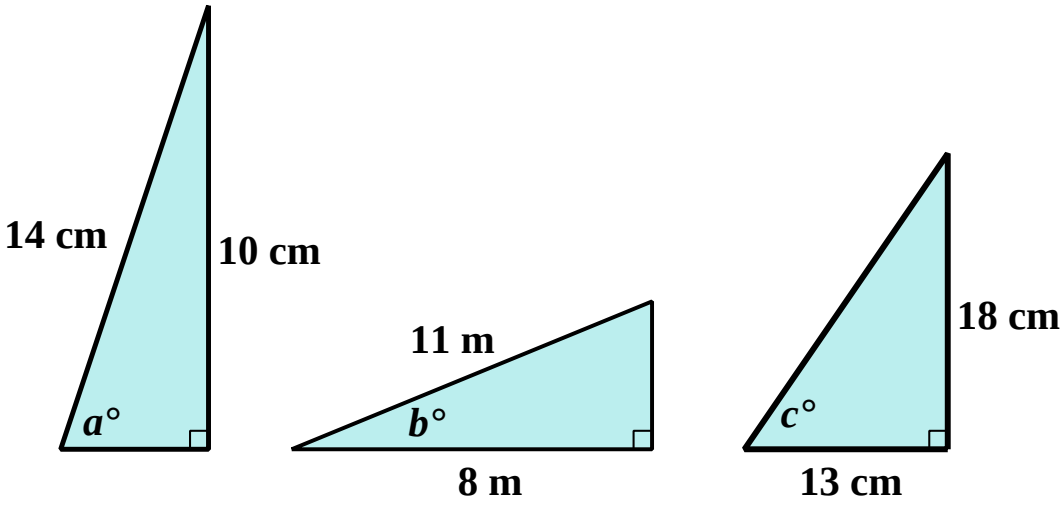
We'll refer to SOH CAH TOA as *the GET YOUR TRIGONOMETRY CORRECT word*. It helps you to remember three formulae to work out angle $v°$.

$$v° = \arcsin\left(\frac{Opp}{Hyp}\right) \qquad v° = \arccos\left(\frac{Adj}{Hyp}\right) \qquad v° = \arctan\left(\frac{Opp}{Adj}\right)$$

Examples

Work out the angles $a°$, $b°$ and $c°$ in these triangles.

REMEMBER : Start by labelling each triangle with *hyp*, *opp* and *adj*.

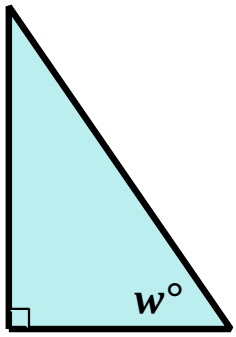


$$a° = \arcsin\left(\frac{Opp}{Hyp}\right) \qquad b° = \arccos\left(\frac{Adj}{Hyp}\right) \qquad c° = \arctan\left(\frac{Opp}{Adj}\right)$$

1.4 Exercise

Question 1

In the following triangle, focus on angle $w°$.



(a) Label the triangle's sides *hyp*, *opp* and *adj*.

(b) Write down *the GET YOUR TRIGONOMETRY CORRECT word*.

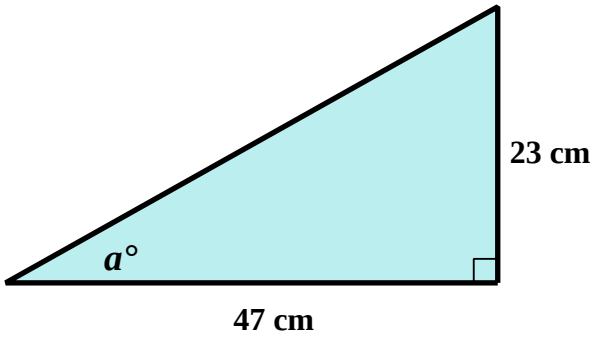
(c) Write down three different formulae that could be used to find $w°$.

Question 2

Calculate the size of angles $p°$, $q°$ and $r°$, where;

$$p° = \arcsin\left(\frac{65.2}{97.6}\right) \qquad q° = \arccos\left(\frac{55}{68}\right) \qquad r° = \arctan\left(\frac{72.7}{20.6}\right)$$

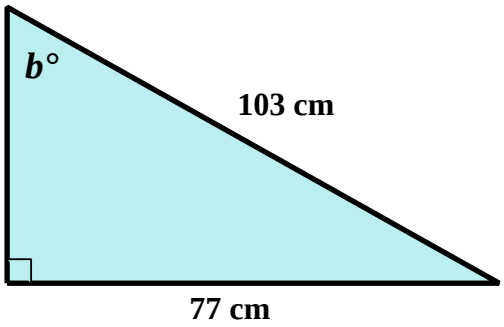
Question 3



(a) Label the triangle's sides *hyp*, *opp* and *adj*.
(b) Write down *the GET YOUR TRIGONOMETRY CORRECT word*.

(c) Find angle $a°$ by using the formula that involves *arctan*,

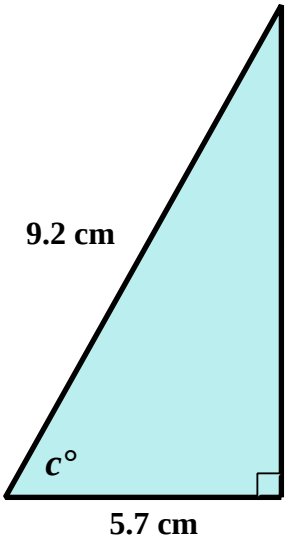
Question 4



(a) Label the triangle's sides *hyp*, *opp* and *adj*.
(b) Write down *the GET YOUR TRIGONOMETRY CORRECT word*.

(c) Find angle $b°$ by using the formula that involves *arcsin.*

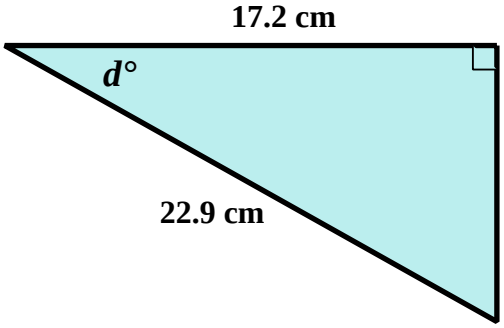
Question 5



(a) Label the triangle's sides *hyp*, *opp* and *adj*.
(b) Write down *the GET YOUR TRIGONOMETRY CORRECT word*.

(c) Find angle $c°$ by using the formula that involves *arccos*

Question 6



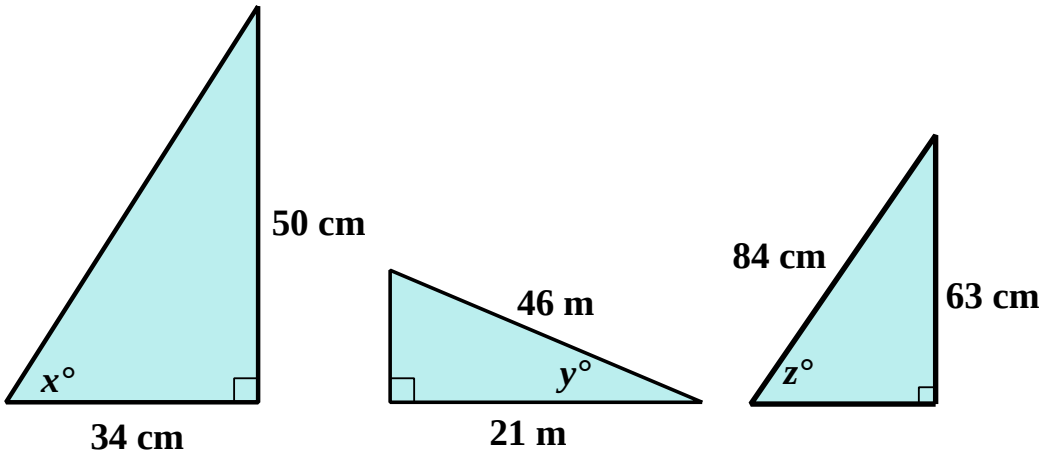
(a) Label the triangle's sides *hyp*, *opp* and *adj*.
(b) Write down *the GET YOUR TRIGONOMETRY CORRECT word*.

(c) Find angle $d°$ by using the appropriate formula.

Question 7

Work out the angle of the slope, $x°$, $y°$ and $z°$ in these triangles.

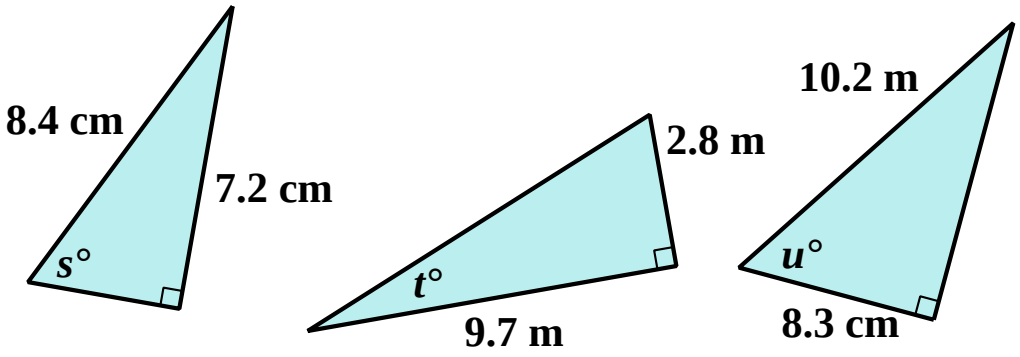
REMEMBER : Start by labelling each triangle with *hyp*, *opp* and *adj*.



Question 8

Work out the angle of the slope, $s°$, $t°$ and $u°$ in these triangles.

REMEMBER : Start by labelling each triangle with *hyp*, *opp* and *adj*.



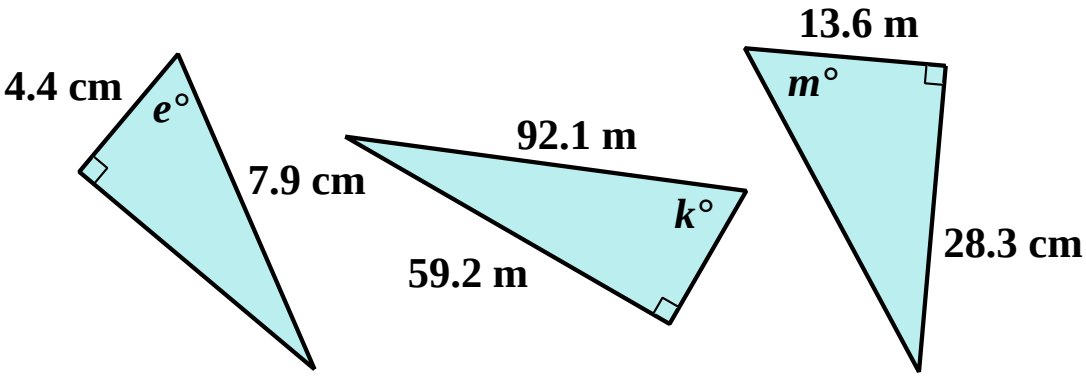
HINT : If it helps, rotate your page.

(So that the triangle looks like )

Question 9

Work out the angle of the slope, $e°$, $k°$ and $m°$ in these triangles.

REMEMBER : Start by labelling each triangle with *hyp*, *opp* and *adj*.



HINT : If it helps, rotate your page.

(So that the triangle looks like )