



Maths
Junior Certificate
Ordinary Level

Past Exam Questions on
PM Trigonometry

Q10 2012 Paper 2 Sample Paper

Question 10

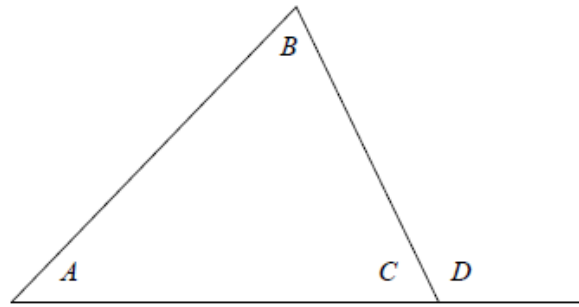
(Suggested maximum time: 10 minutes)

- (a) From the diagram opposite write down three angles which together add up to 180° .

$$\square + \square + \square = 180^\circ$$

- (b) From the diagram opposite write down two angles which together add up to 180° .

$$\square + \square = 180^\circ$$



- (c) What can you conclude from your two statements about the relationship between $|\angle D|$ and $(|\angle A| + |\angle B|)$

- (d) Find α in the diagram.

Q11 2012 Paper 2 Sample Paper

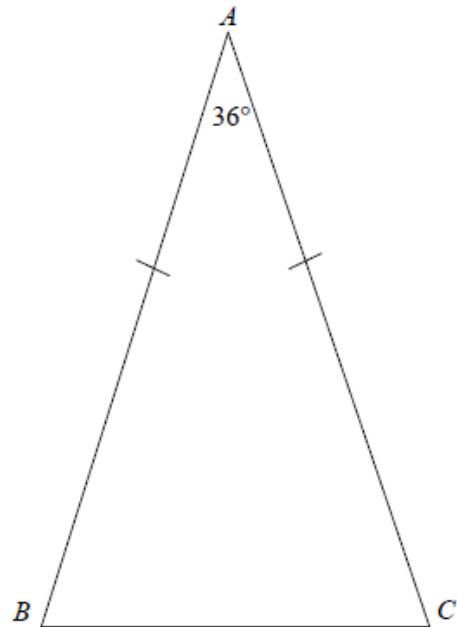
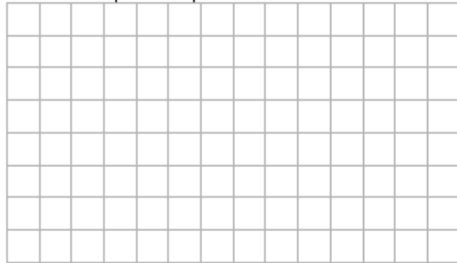
Question 11

(Suggested maximum time: 15 minutes)

The triangle ABC is isosceles.

$|\angle BAC| = 36^\circ$.

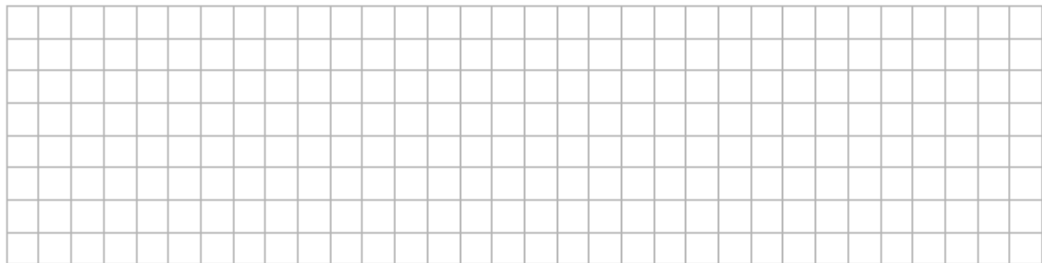
- (a) Calculate $|\angle ACB|$.



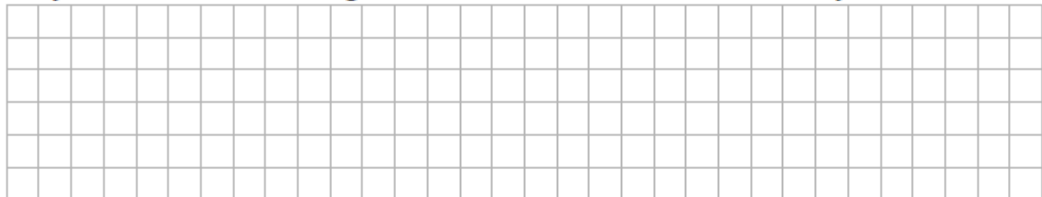
- (b) On the diagram construct the bisector of $\angle ABC$. Show all construction lines clearly.

- (c) Mark in the point D where your bisector meets the line AC .

- (d) Calculate all the angles in the triangle BDC and write them into the diagram.



- (e) Can you conclude that the triangle BDC is also isosceles? Give a reason for your answer.



- (e) Measure $|AC|$ and $|BC|$.

$|AC| = \underline{\hspace{2cm}} \text{ cm}$

$|BC| = \underline{\hspace{2cm}} \text{ cm}$

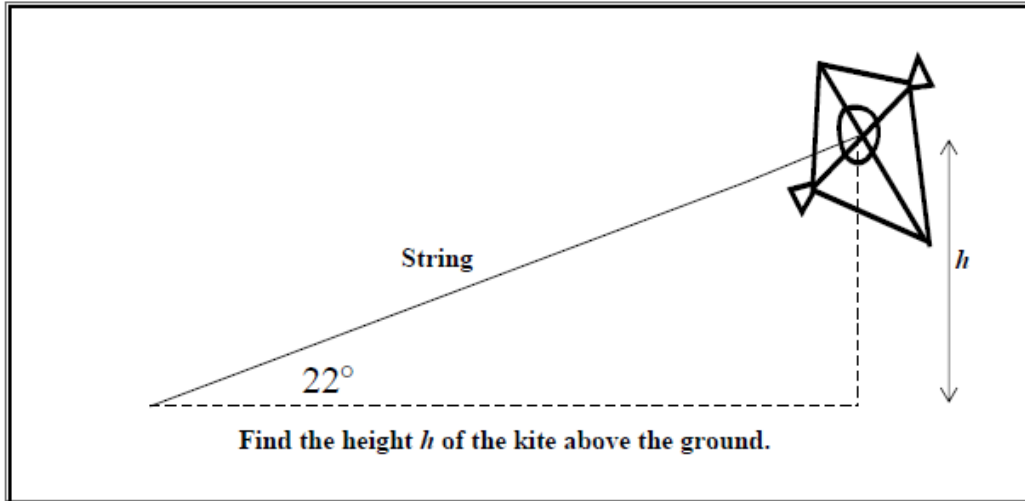
- (f) Calculate the ratio $\frac{|AC|}{|BC|}$ correct to three places of decimals. $\frac{|AC|}{|BC|} = \underline{\hspace{2cm}}$

Q13 2012 Paper 2 Sample Paper

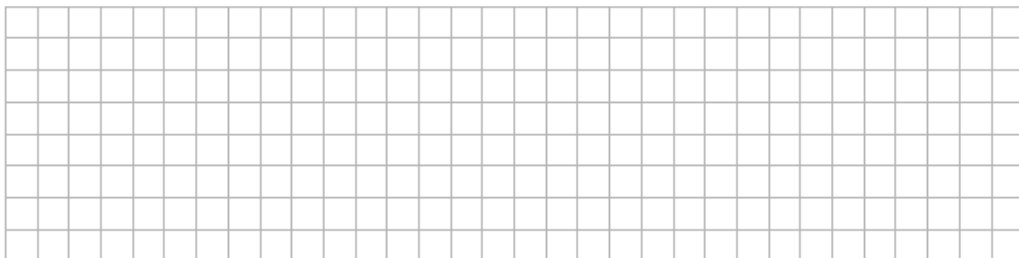
Question 13

(Suggested maximum time: 5 minutes)

Anne wanted to create a question which would use $\sin 22^\circ$ in its solution. She drew the diagram and wrote the question in the box below.



- (a) Anne has not enough information to answer the question. Put in an appropriate measurement on the diagram to complete it for her.
- (b) Using your measurement, find the height h in the diagram.

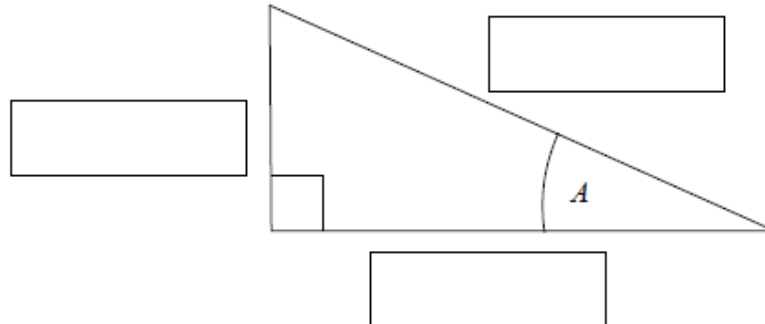


Q12 2012 Paper 2

Question 12

(suggested maximum time: 5 minutes)

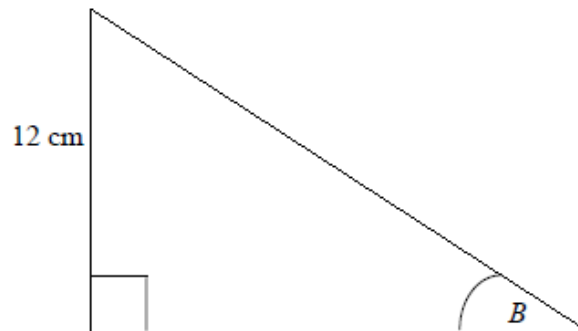
- (a) The diagram below shows the angle A in a right-angled triangle. Indicate which side is adjacent and which is opposite in relation to the angle A , and which side is the hypotenuse.



- (b) Fill in the appropriate ratios in the table below.

Trigonometric Ratio	Ratio
	$\frac{\textit{opposite}}{\textit{hypotenuse}}$
$\text{Cos } A$	
	$\frac{\textit{opposite}}{\textit{adjacent}}$

- (c) In the right angled triangle below $B = 35^\circ$ and the opposite side is 12 cm. Find the length of the hypotenuse correct to the nearest centimetre.

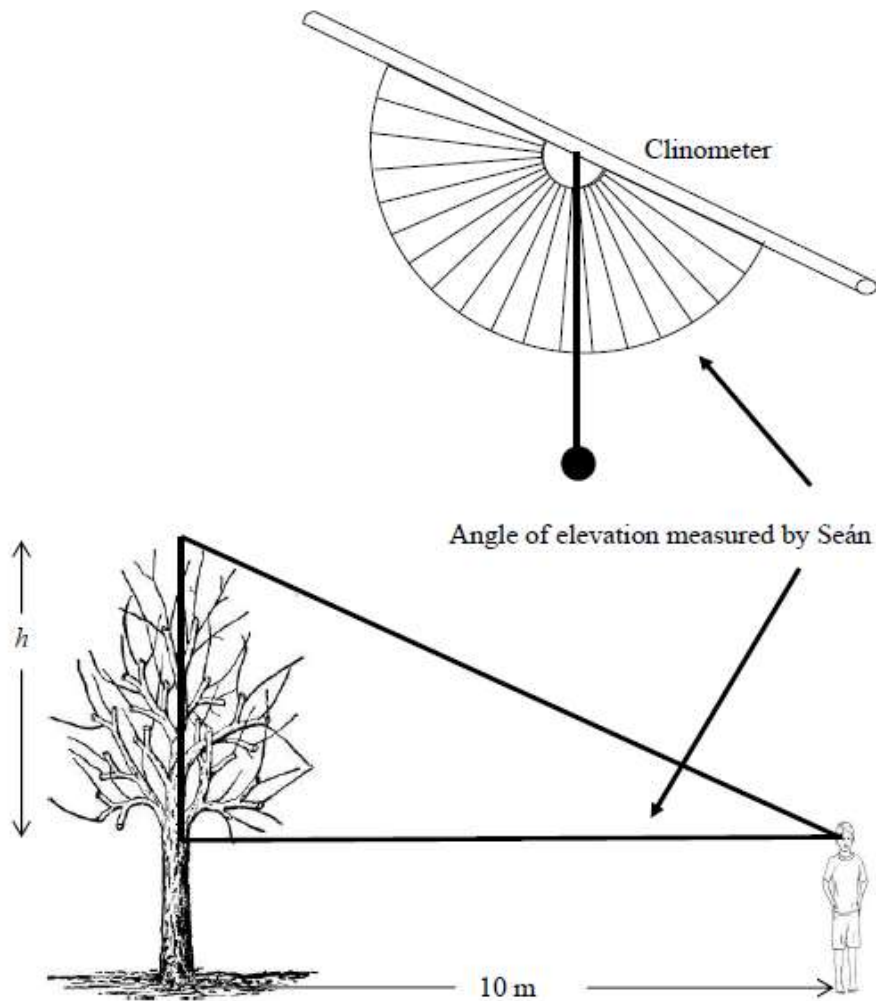


Q13 2012 Paper 2

Question 13

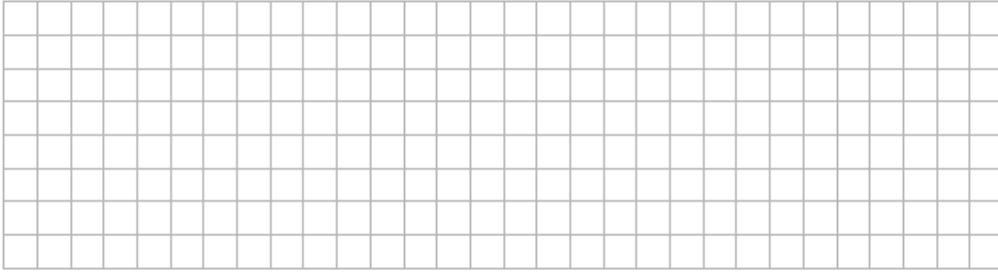
(suggested maximum time: 10 minutes)

Seán makes a clinometer using a protractor, a straw, a piece of thread and a piece of plasticine (used as a weight). He stands 10 m from a tree and uses his clinometer to measure the angle of elevation to the top of the tree as shown. Seán is 1.75 m in height.

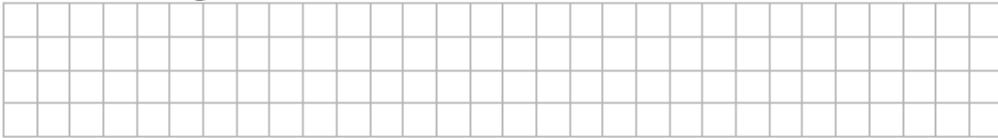


- (a) Find the angle of elevation by reading the clinometer above. _____.

- (b) Calculate the height h as shown in the diagram. Give your answer correct to two decimal places.



- (c) Find the total height of the tree.



- (d) Another student uses the same method as Seán and finds the height of the tree to be 23.1 m. Seán did not get this answer. Give one possible reason why the answers might be different.

