

Name:

## 2.4 Quiz: The law of sines and applications

1. Express each value as a decimal, first writing the whole calculator display, and then the 3 sig-fig approximation. [4 marks]

(a)  $\frac{5\pi}{6}$

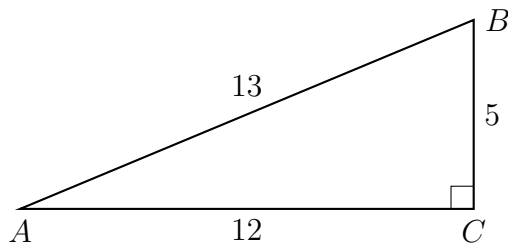
(b)  $\frac{1 + \sqrt{5}}{2}$

2. Express each value as a decimal, rounding to 3 sig-figs if necessary. [3 marks]

(a)  $1.41421 \times 10^3$

(b)  $1.006275 \times 10^{-2}$

3.  $\triangle ABC$  is shown with  $m\angle C = 90^\circ$  and the lengths of the triangle's sides are  $BC = 5$ ,  $AC = 12$ , and  $AB = 13$ .

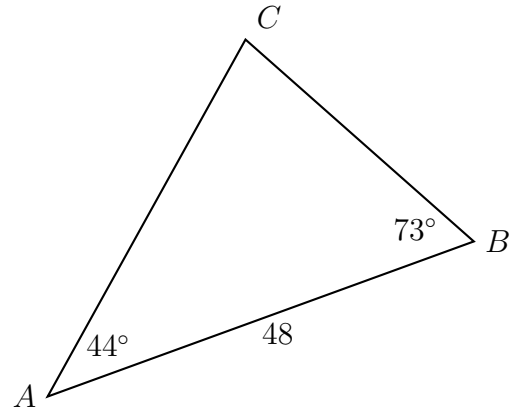


- (a) Write down the value of  $\sin A$ .  
hint: write a fraction [1 mark]

- (b) Find the measure of  $\angle A$ . [2 marks]

**Approximations must be rounded to three significant figures and preceded by a long decimal followed by an ellipsis. (e.g. 3.1415926...)**

4. Given  $AB = 48$ ,  $\hat{CAB} = 44^\circ$ , and  $\hat{ABC} = 73^\circ$ , as shown. Find the length of the triangle side  $BC$ . [4 marks]



5. A ship is sailing due north. A lighthouse is sighted at a bearing of  $051^\circ$  at an unknown distance,  $d$ . After the ship proceeds 20 kilometers, the lighthouse has a bearing of  $110^\circ$ .

Find the original distance to the lighthouse,  $d$ .

[6 marks]