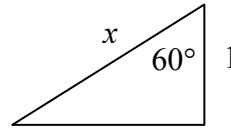


Yr 11 Preliminary 2 Unit Mathematics

Mixed Trigonometry Problems – Homework Assignment Due 23/3/2009

Full Working must be shown

1. The value of x in this triangle is



2. The angle of elevation of the sun's rays over a 20 m high tree is 62° . Find the length of the tree's shadow to 2 decimal places

3. A rectangle has one side length of 2 m and a diagonal of length 5 m. Find the angle the diagonal makes with the other side (of unknown length) is approximately

4. The exact value of $\sin 240^\circ$ is

5. The exact value of $\tan 300^\circ$ is

7. If $\sin \theta = 0.84$ then $\sin(90 + \theta)$ is equal to

8. If $\sin x = 0.4$ and $0 \leq x \leq 90^\circ$ then $\cos x$ could be

11. If $0 \leq x \leq 360^\circ$ and $\cos x = -\frac{\sqrt{3}}{2}$ then x is equal to

12. Solve $\cos x = \frac{1}{\sqrt{2}}$ for $0 \leq x \leq 360^\circ$

13. Solve for $0 \leq x \leq 360^\circ$ giving exact solutions.

a. $\tan x = -1$

b. $2\sin x + \sqrt{3} = 0$

14. In the Triangle ABC, $BC = 19\text{cm}$, $\angle BAC = 63^\circ$, $\angle ABC = 39^\circ$.
Find the length of AC

15. In the Triangle ABC, $AC = 9\text{cm}$, $BC = 18\text{cm}$, $\angle ABC = 26^\circ$. Find the size of $\angle BAC$

16. A hiker starts her journey at point A. She notices a farm house at point C and works out its bearing is at 138° . She then walks for 5 kilometres and stops at point B. At point B the hiker looks again at the farm house and calculates its bearing now to be 200° . Calculate the distances AC and BC.

17. Show that $\tan^2 \theta \cos^2 \theta + 1 - \sin^2 \theta = 1$

18. $\frac{\cos \theta \tan \theta}{\sin \theta} - \cos^2 \theta =$