Name:
Group A
Result:

1. [2 *points*]

The observer stands at the top of a 24-metre cliff. The angle of depression from the observer to a ship is 13°.

a) Sketch a diagram to illustrate the information given.

b) Find the distance between the observer and the ship.

2. [2 *points*]

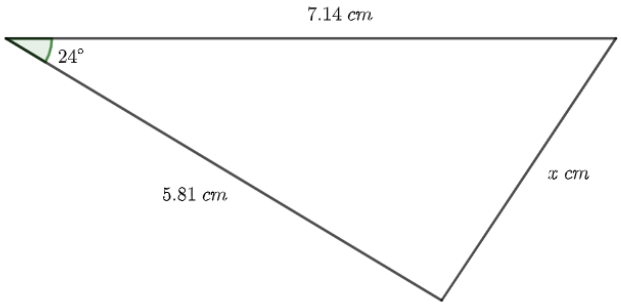
In part (a) convert radians to degrees, in part (b) convert degrees to radians:

a) $\frac{5\pi}{6} =$ $\frac{7\pi}{4} =$

b) $15° =$ $320° =$

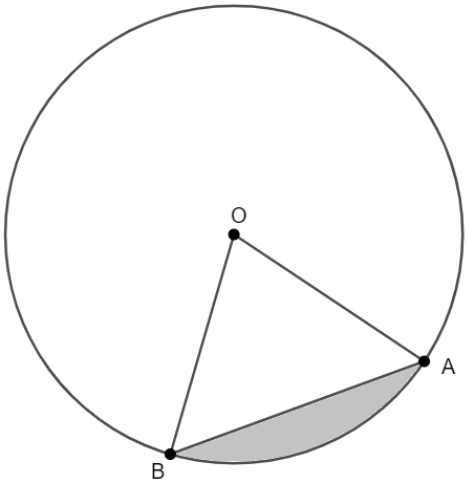
3. [2 *points*]

Find x. Give your answers correct to 3 significant figures.



4. [3 *points*]

Find the area of the shaded region given that O is the centre of the circle, its radius is equal to 4 cm and the area of the triangle AOB is 6 cm^2. You may assume that the angle $\angle AOB$ is acute.



5. [4 *points*]

In a triangle HJK, $HK = 18\ cm$, $JK = 15\ cm$ and $\angle JHK = 53°$. Find the two possible values of the angle $\angle HJK$ and hence find the two possible areas of the triangle.

6. [3 *points*]

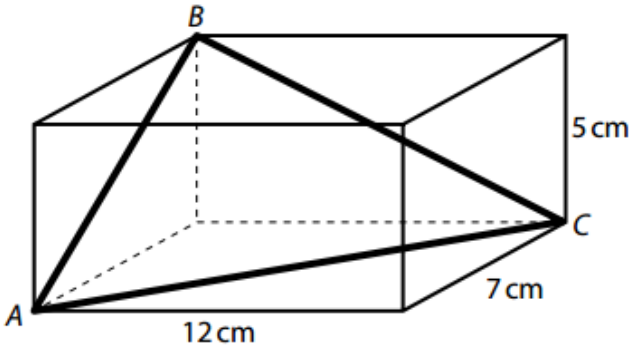
An airplane takes off from point A. It flies 850 km on a bearing of 030°. It then changes direction to a bearing of 065° and flies a further 500 km and lands at point B.

a) What is the straight line distance from A to B?

b) What is the bearing from A to B?

7. [4 *points*]

For the rectangular box shown below:



a) Calculate the size of the angle $\angle ABC$

b) Calculate the area of the triangle ABC.