QQQ - PureYr1 - Chapter 9 – Trigonometric Ratios (v4)

Total Marks: 17

(17 = Platinum, 15 = Gold, 13 = Silver, 11 = Bronze)

1.

Figure 1

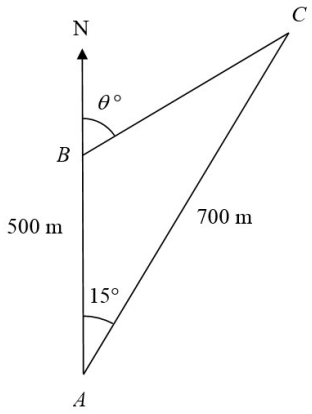


Figure 1 shows 3 yachts A, B and C which are assumed to be in the same horizontal plane. Yacht B is 500 m due north of yacht A and yacht C is 700 m from A. The bearing of C from A is 015°.

(a) Calculate the distance between yacht B and yacht C, in metres to 3 significant figures.

(3)

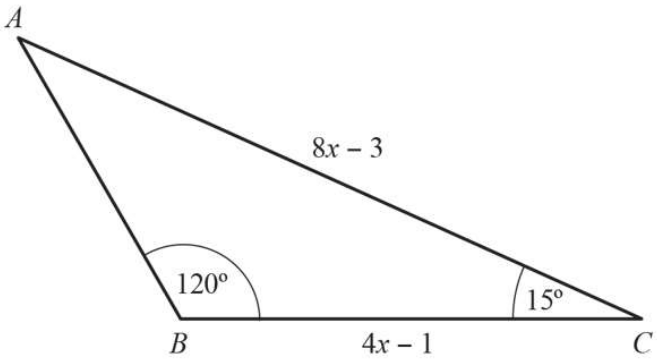
The bearing of yacht C from yacht B is $\theta°$, as shown in Figure 1.

(b) Calculate the value of θ.

(4)

2.

The diagram shows $\triangle ABC$ with $AC = 8x - 3$, $BC = 4x - 1$, $\angle ABC = 120°$ and $\angle ACB = 15°$.



(a) Show that the exact value of x is $\frac{9+\sqrt{6}}{20}$.

(7)

(b) Find the area of $\triangle ABC$, giving your answer to 2 decimal places.

(3)

(Total 10 marks)