IB SL MATHEMATICS

TRIG PACKET #1

NAME: _____

DATE: _____

1. The diagram shows a vertical pole PQ, which is supported by two wires fixed to the horizontal ground at A and B.





Find

- (a) the height of the pole, PQ;
- (b) the distance between A and B.

Working:		
	Answers:	
	(a)	
	(b)	
		(Total 4 marks)

2. Town A is 48 km from town B and 32 km from town C as shown in the diagram.



Given that town B is 56 km from town C, find the size of angle \hat{CAB} to the nearest degree.

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3. The following diagram shows a triangle with sides 5 cm, 7 cm, 8 cm.



Find

- (a) the size of the smallest angle, in degrees;
- (b) the area of the triangle.

Working:		7
	Answers:	
	(a)	
	(b)	
]	(Total 4 marks)

4. The diagrams below show two triangles both satisfying the conditions

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AB = 20 \text{ cm}, AC = 17 \text{ cm}, \hat{ABC} = 50^{\circ}.
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- (a) Calculate the size of ACB in **Triangle 2.**
- (b) Calculate the area of **Triangle 1**.

Working:]
	Answers:	
	(a)	
	(b)	
]	(Total 4 marks)

5. Two boats A and B start moving from the same point P. Boat A moves in a straight line at 20 km h^{-1} and boat B moves in a straight line at 32 km h^{-1} . The angle between their paths is 70°.

Find the distance between the boats after 2.5 hours.

Working:		
-		
	Answer:	
	(Total 6 marks)

6. The diagram shows a triangle ABC in which AC = 7 $\frac{\sqrt{2}}{2}$, BC = 6, ABC = 45°.



The point D is on (AB), between A and B, such that sin $\hat{BDC} = \frac{6}{7}$.

- (b) (i) Write down the value of $\hat{BDC} + \hat{BAC}$.
 - (ii) Calculate the angle BCD.

(a)

(iii) Find the length of [BD].

(c) Show that
$$\frac{\text{Area of } \triangle \text{BDC}}{\text{Area of } \triangle \text{BAC}} = \frac{\text{BD}}{\text{BA}}$$
.

(2) (Total 10 marks)

(6)

(2)