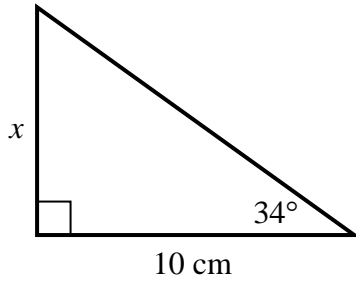


# Trigonometry Quiz

Level 1 – 2

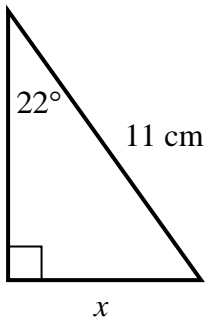
1. Find the missing length:

a)



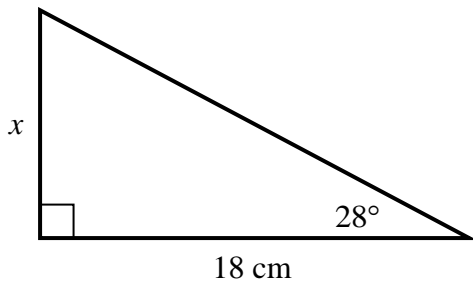
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b)



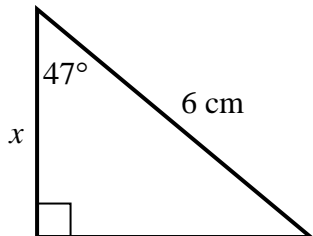
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c)



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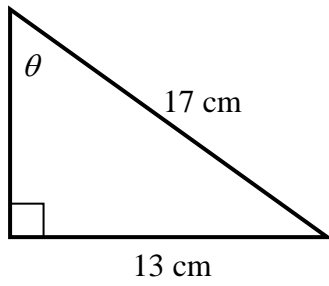
d)



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2. Find the missing length or angle

a)



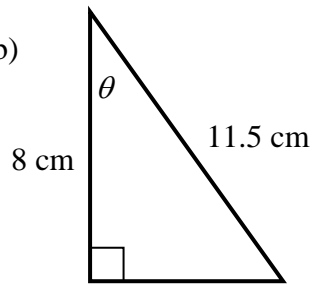
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b)



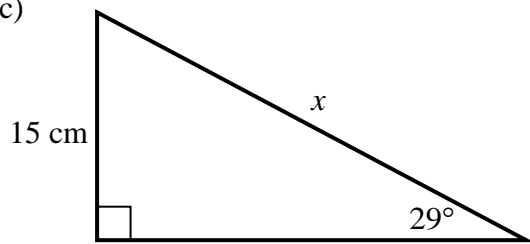
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c)



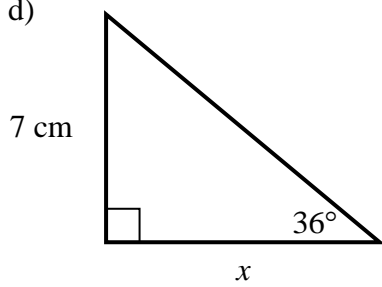
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d)



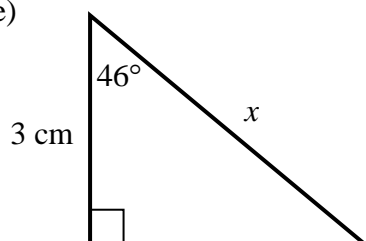
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e)



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Level 5 – 6

3. An isosceles triangle has two sides of length 10 cm and two angles of  $70^\circ$ . Determine the length of the third side.

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4. Use the definition of sine to explain why the sine of an angle can never be greater than 1.

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5. Determine the largest angle in an isosceles triangle with sides of length 12 cm, 12 cm and 16 cm.

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6. Peter leaves his house and walks north for 6 km and then northwest for 4 km. Determine how far he is from his home.

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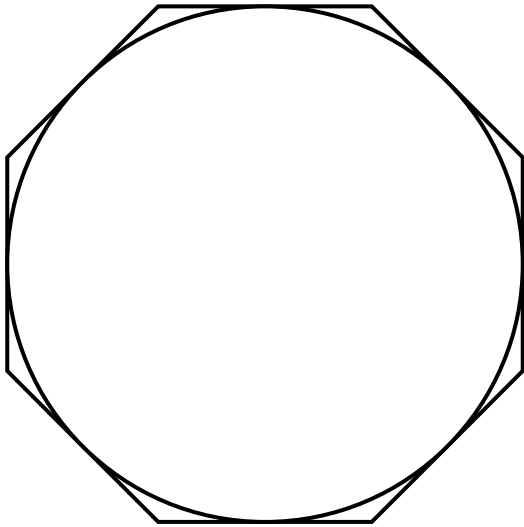
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7. The smallest possible octagon is drawn so that a circle of radius 1 cm fits completely inside it, as shown in the diagram.



- a) Determine the area of the octagon.

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- b) Determine an expression for the area of the smallest possible regular polygon inside which a circle of radius 1 cm fits. Write your answer in terms of  $n$ , where  $n$  represents the number of sides of the polygon.

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- c) If  $n = 10000$ , determine the area of the polygon.

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- d) What do you notice about your answer to part c)? Explain.

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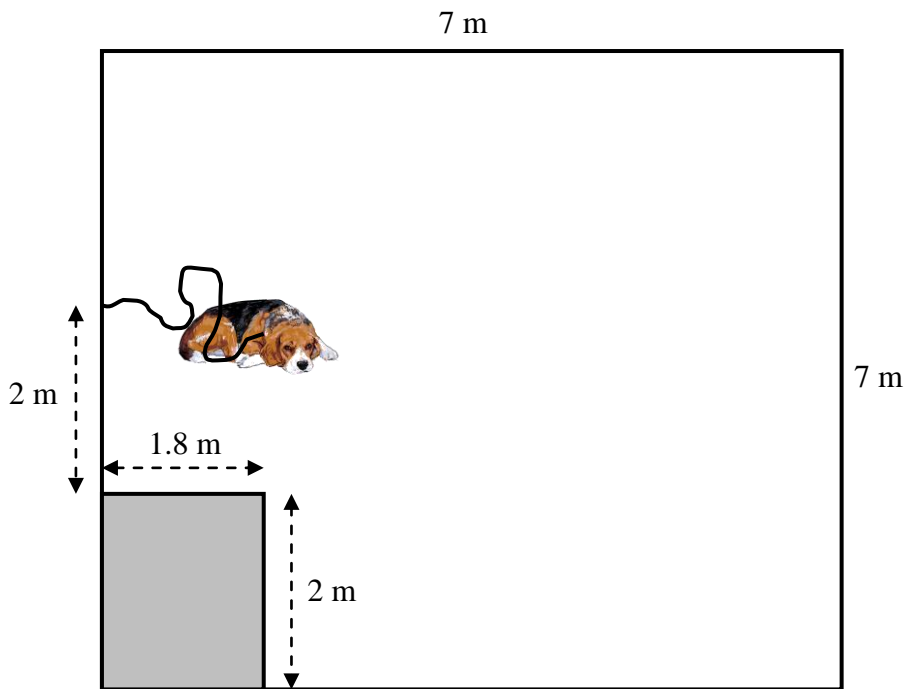
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8. Bob the beagle is tied to the fence with a rope of length 4 m. As shown in the diagram. In the corner of the garden there is a shed. Calculate the area of the garden where Bob is free to roam.



A large dashed rectangular box is provided for the student to show their work and calculations.