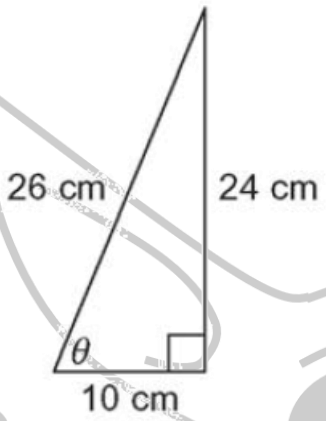
Name: _____ Date: _____ MAP 4C1

REVIEW – CHAPTER 2

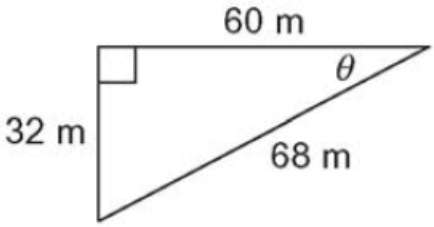
2.1 – TRIGONOMETRIC RATIOS WITH ACUTE ANGLES

1. For each triangle, write the three primary trigonometric ratios relative to ∠Θ. Express each ratio as a fraction in lowest terms

(a)

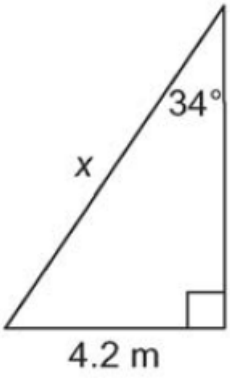


(b)

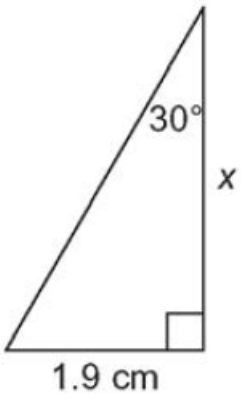


2. Use trigonometric ratios to determine the length of x. Express your answer to one decimal place

(a)



(b)

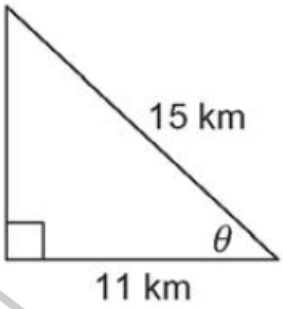


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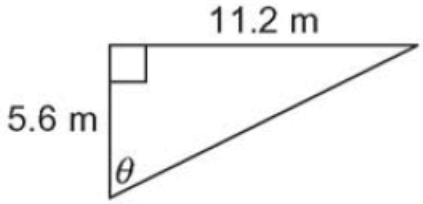
Name: _____ Date: _____ MAP 4C1

3. Use trigonometric ratios to solve for ∠Θ to the nearest degree

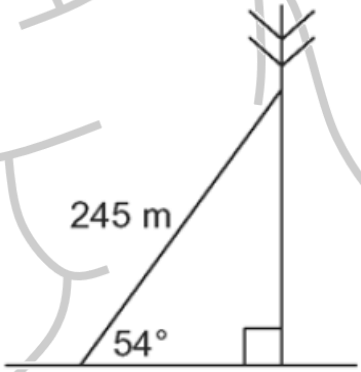
(a)



(b)



4. (a) A radio mast is supported by a guy wire (pictured below) that is **245 m** in length and that has an angle of elevation (inclination) of **54°**. How far up the mast does the guy wire reach?



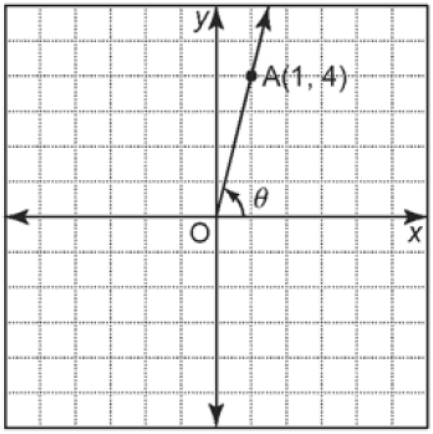
(b) What is the angle of elevation (inclination) of a guy wire anchored **144 m** from the base of a radio mast that reaches **286 m** up it? Use a diagram to answer this question.

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Name: _____ Date: _____ MAP 4C1

2.2 – TRIGONOMETRIC RATIOS WITH OBTUSE ANGLES

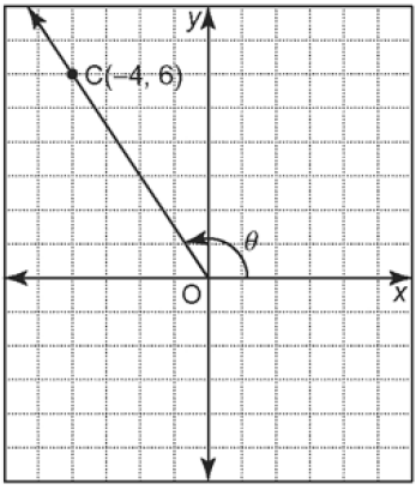
1. The terminal arm of an angle, Θ, in standard position passes through the point A(1, 4) pictured on the right



(a) Determine the length of **OA**

(b) Determine the primary trigonometric ratios to three decimal places

2. The terminal arm of an angle in standard position passes through the point C(- 4, 6) pictured on the right



(a) Determine the length of OC

(b) Determine the primary trigonometric to three decimal places

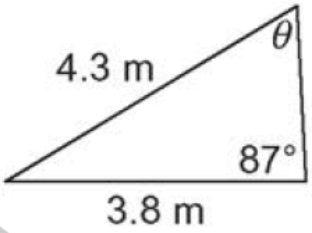
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Name: _____ Date: _____ MAP 4C1

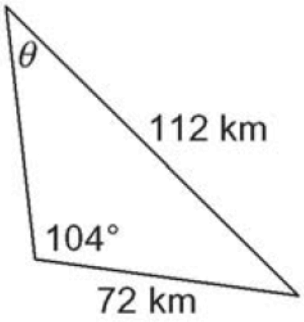
2.3 – THE SINE LAW

1. Use the Sine Law to determine the measure of ∠Θ to the nearest degree

(a)

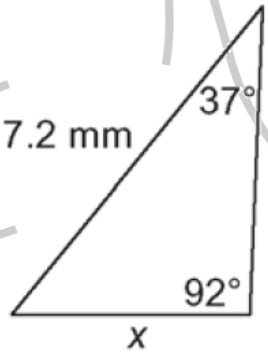


(b)

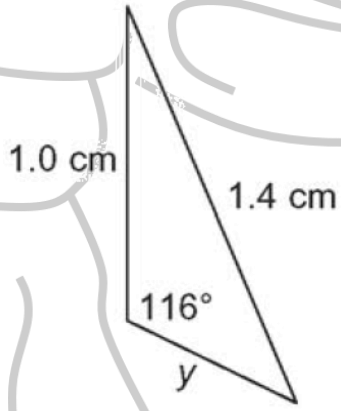


2. Use the Sine Law to determine the length of each indicated side. Express your answer to one decimal place

(a)



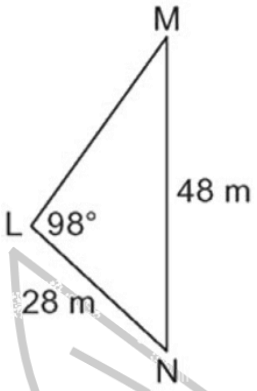
(b)



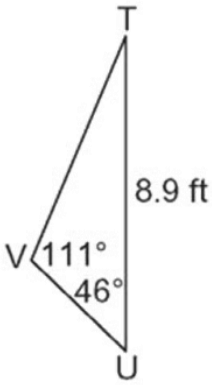
Name: _____ Date: _____ MAP 4C1

3. Solve each triangle for *all* angles to the nearest degree and *all* side lengths to one decimal place

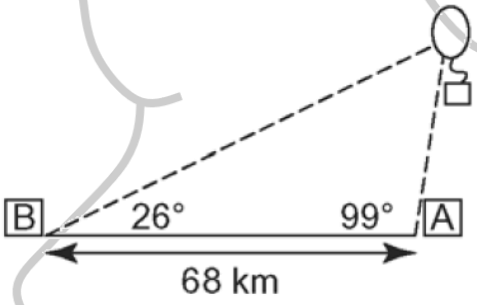
(a)



(b)



4. A weather balloon is being tracked by two radar stations that are **68 km** apart (pictured). The angle between the radio signals sent from both Stations are shown below. Use the Sine Law to calculate how high the weather balloon is from the ground.



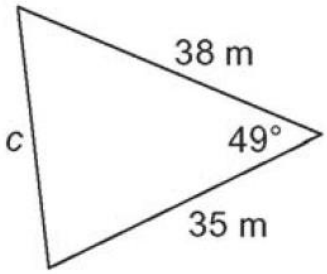
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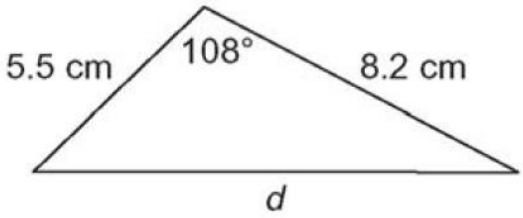
2.4 – THE COSINE LAW

1. Use the Cosine Law to determine the length of each indicated side to the nearest unit.

(a)

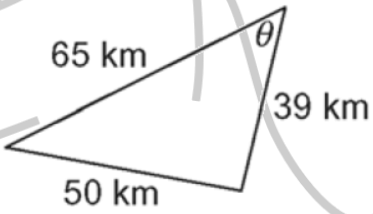


(b)

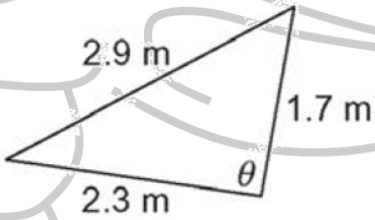


2. Determine the measure of each indicated angle, Θ, to the nearest degree

(a)



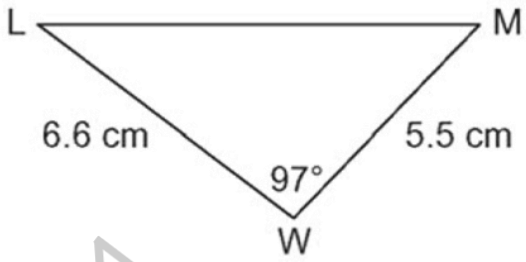
(b)



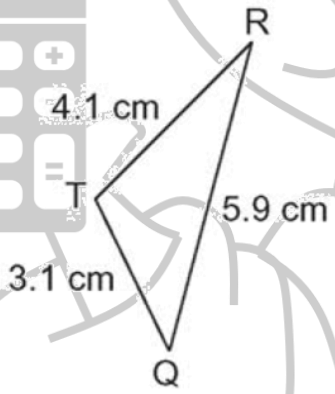
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Name: _____ Date: _____ MAP 4C1

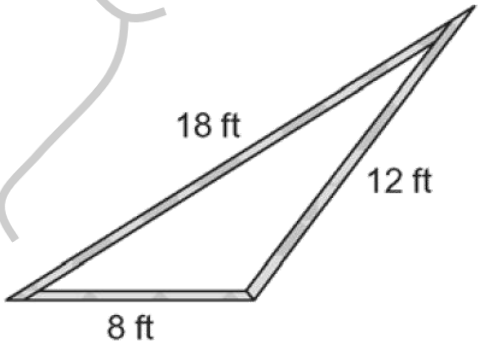
3. (a) For the triangle below, use the Cosine Law to determine side **LM**



(b) For the triangle below, use the Cosine Law to determine **∠T**



4. A triangular frame is to be made from three pieces of wood as pictured below. Use the Cosine Law to determine the angle measures of each corner

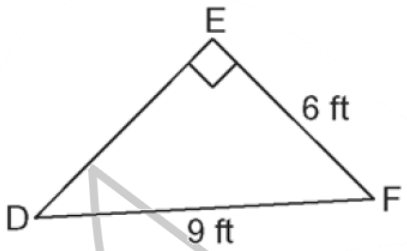


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Name: _____ Date: _____ MAP 4C1

2.5 – APPLICATIONS OF TRIGONOMETRY

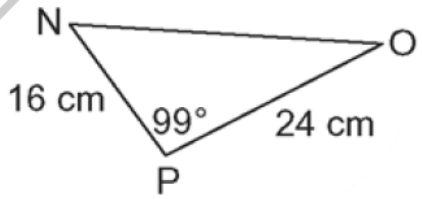
1. (a) For the diagram below, use the most appropriate tool (basic trigonometric ratios, Sine Law or Cosine Law) to determine ∠**F**



(b) For the diagram below, use the most appropriate tool (basic trigonometric ratios, Sine Law or Cosine Law) to determine ∠**S** and **side *t***



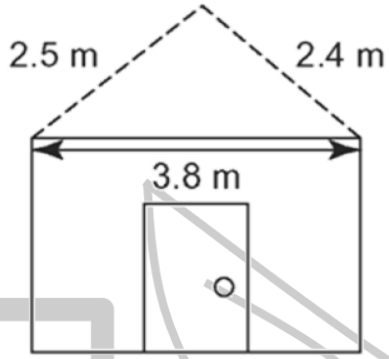
(c) For the diagram below, use the most appropriate tool (basic trigonometric rations, Sine Law or Cosine Law) to determine **side *p***



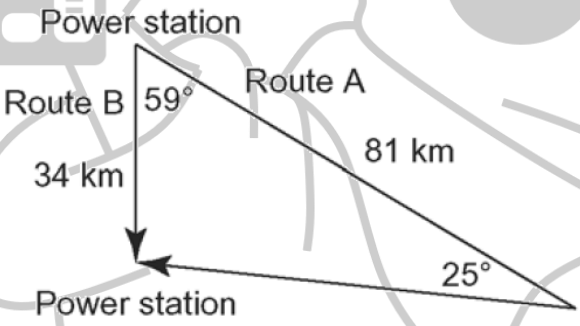
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Name: _____ Date: _____ MAP 4C1

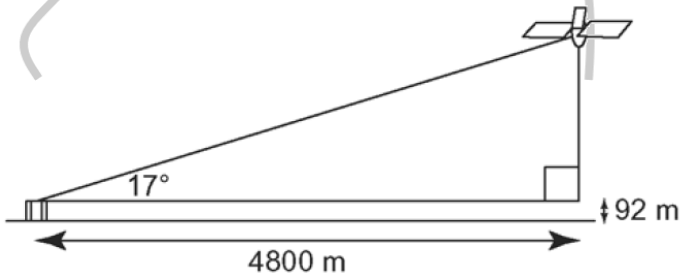
2. Amina is constructing a roof for her shed. The width of her shed is **3.8 m** and she plans to make the sloping sides of the roof **2.4 m** and **2.5 m** in length as pictured. Use an appropriate tool to determine the measure of the three interior angles of the roof. Label them on the diagram.



3. An electric company has two options for the route of a proposed transmission line as pictured below. Use an appropriate tool to determine the **total length of Route A**



4. An air traffic controller is in a control tower **92 m** above the ground (as pictured below). He estimates his angle of elevation to a passing airplane to be **17°**. The airplane is approximately **4800 m** from the control tower. Determine **how high** the airplane is above the ground



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Name: _____ Date: _____ MAP 4C1

SOLUTIONS

2.1

1. (a) sinΘ = 12/13, cosΘ = 5/13, tanΘ = 12/5

   (b) sinΘ = 8/17, cosΘ = 15/17, tanΘ = 8/15

2. (a) 7.5 m (b) 3.3 cm

3. (a) 43° (b) 63°

4. (a) 198.2 m (b) 63.3°

2.2

1. (a) 4.123 (b) sinΘ = 0.970, cosΘ = 0.243, tanΘ = 4

2. (a) 7.211 (b) sinΘ = 0.832, cosΘ = - 0.555, tanΘ = - 1,5

2.3

1. (a) 62° (b) 39°

2. (a) 4.3 mm (b) 0.6 cm

3. (a) ∠M = 35°, ∠N = 47°, n = 35.3 m (b) ∠T = 23°, t = 3.7 ft, u = 6.9 ft

4. 36.4 km

2.4

1. (a) 30 m (b) 11.2 cm

2. (a) 50° (b) 92°

3. (a) 9.1 cm (b) 109°

4. 32°, 21° and 127°

2.5

1. (a) 48° (b) ∠S = 40°, t = 16.0 m (c) 30.9 cm

2. Top = 102°, bottom left = 38°, bottom right 40°

3. 150 km

4. 1560 m

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