

Date: _____

Today's Learning Goal(s):

By the end of the class, I will be able:

- a) prepared for the Unit 5 Summative Tuesday.

Last day's work: pp. 332-335 #3 – 6 [7, 14]

3d, 5, 6
c

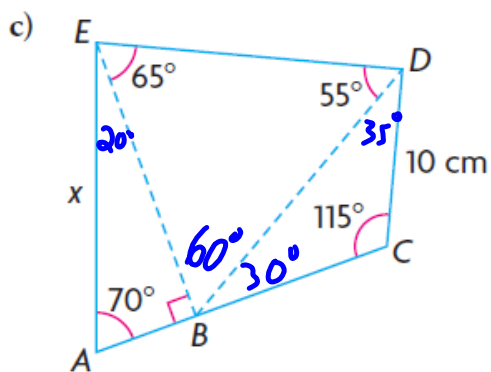
5.R Unit 5 Review Redo Quiz 5.1

Date: _____

- 5.1 Trig Raos of Acute Angles (**6** Trig Raos)
- 5.2 Trig Raos of Special Angles (**Exact** Values)
- 5.3 Trig Raos of Obtuse Angles (Angles in Standard Posion)
- 5.4 **CAST** Rule & Related Acute Angles (RAA; **β** vs **θ**)
- 5.4 Evaluang Trigonometric Raos for $0^\circ \leq \theta \leq 360^\circ$ (**Both** answers)
- 5.6 The Sine Law (& **Ambiguous** Case)
- 5.7 The Cosine Law
- 5.8 Solving 3-Dimensional Problems Using Trigonometry

p. 332 #3

3. Determine the value of x to the nearest centimetre and θ to the nearest **K** degree. Explain your reasoning for each step of your solution.



$$\sin 70^\circ = \frac{EB}{x}$$

$$\frac{EB}{\sin 55^\circ} = \frac{BD}{\sin 65^\circ}$$

$$\frac{BD}{\sin 115^\circ} = \frac{10}{\sin 30^\circ}$$

$$\sin 70^\circ = \frac{16.38}{x}$$

$$EB = \sin 55^\circ \times \frac{18.12}{\sin 65^\circ}$$

$$BD = \sin 115^\circ \times \frac{10}{\sin 30^\circ}$$

$$x = \frac{16.38}{\sin 70^\circ}$$

$$= 16.38$$

$$= 18.12$$

$$\approx 17.4$$

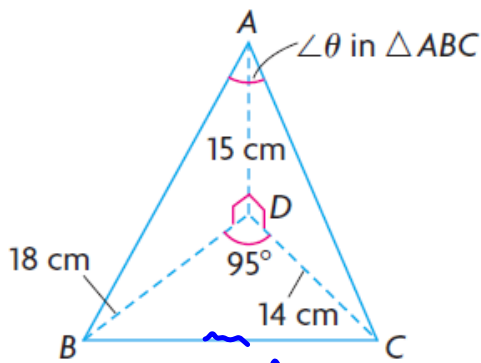
$$\approx 17 \text{ cm}$$

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3. Determine the value of x to the nearest centimetre and θ to the nearest

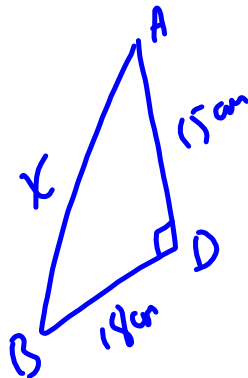
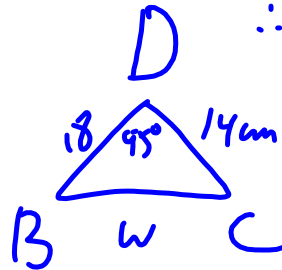
K degree. Explain your reasoning for each step of your solution.

d)



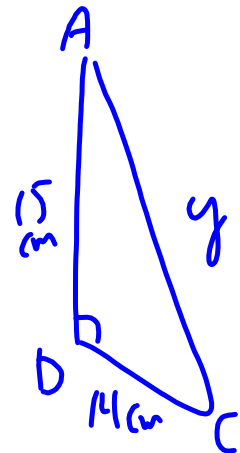
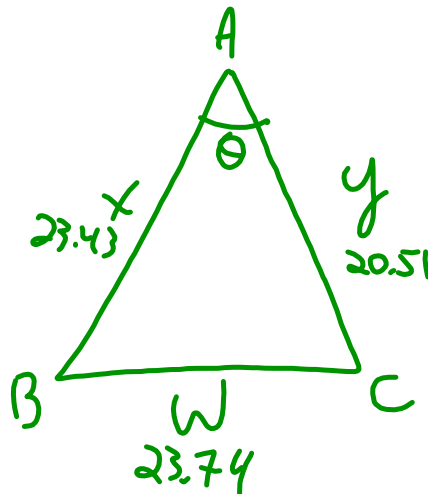
$$w^2 = 18^2 + 14^2 - 2(18)(14)\cos 95^\circ$$

$$\therefore w \doteq 23.74$$



$$x^2 = 18^2 + 15^2$$

$$x \doteq 23.43$$



$$y^2 = 15^2 + 14^2$$

$$y \doteq 20.51$$

$$\therefore \cos \theta = \frac{23.43^2 + 20.51^2 - 23.74^2}{2(23.43)(20.51)}$$

$$\theta = \cos^{-1}(\quad)$$

$$\theta \doteq 65.00$$

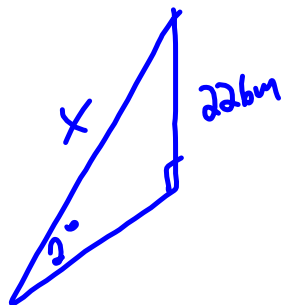
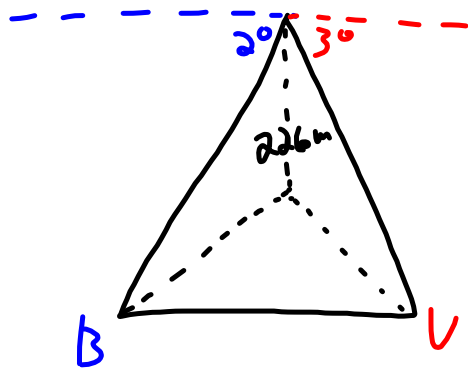
$$= 65^\circ$$

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5. While Travis and Bob were flying a hot-air balloon from Beamsville to Vineland in southwestern Ontario, they decided to calculate the straight-line distance, to the nearest metre, between the two towns.

- From an altitude of 226 m, they simultaneously measured the angle of depression to Beamsville as 2° and to Vineland as 3° .
- They measured the angle between the lines of sight to the two towns as 80° .

Is there enough information to calculate the distance between the two towns? Justify your reasoning with calculations.



$$\sin 2^\circ = \frac{226}{x}$$

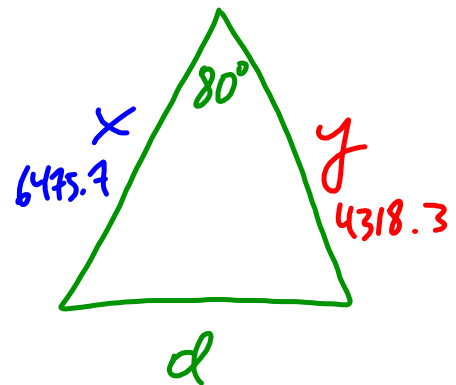
$$x = \frac{226}{\sin 2^\circ}$$

$$= 6475.7$$



$$y = \frac{226}{\sin 3^\circ}$$

$$= 4318.3$$



$$d^2 = 6475.7^2 + 4318.3^2 - 2(6475.7)(4318.3)\cos 80^\circ$$

$$d = 7132.36$$

$$\approx 7133 \text{ m}$$

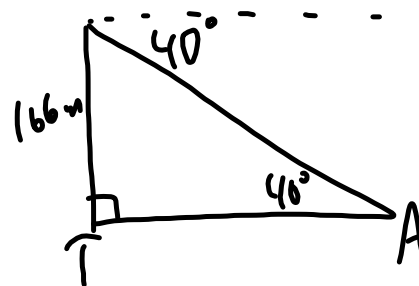
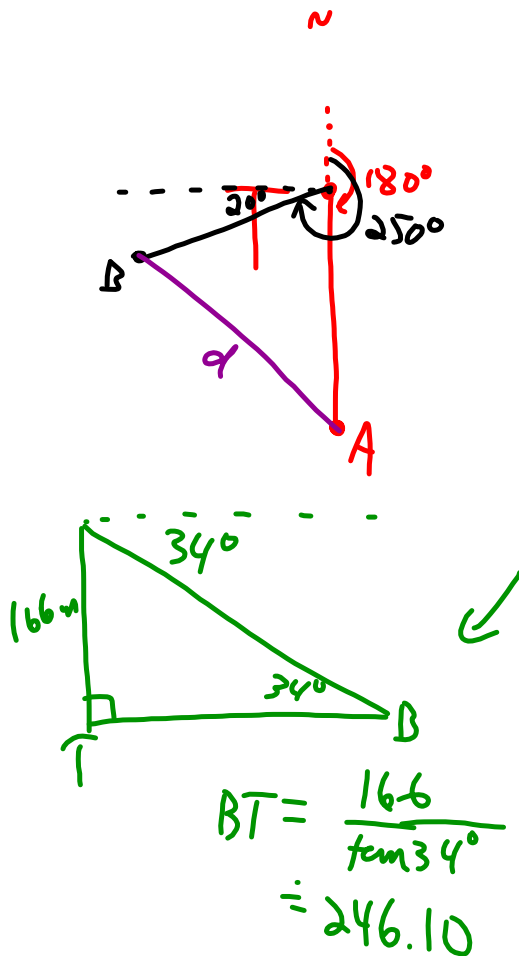
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6. The observation deck of the Skylon Tower in Niagara Falls, Ontario, is

A 166 m above the Niagara River. A tourist in the observation deck notices two boats on the water. From the tourist's position,

- the bearing of boat A is 180° at an angle of depression of 40°
- the bearing of boat B is 250° at an angle of depression of 34°

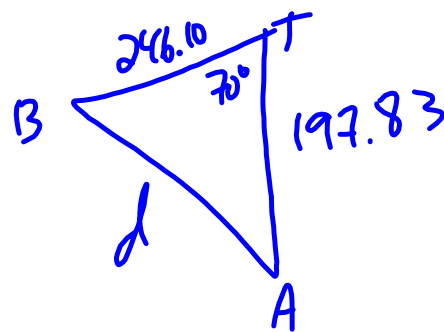
Calculate the distance between the two boats to the nearest metre.



$$\tan 40^\circ = \frac{166}{AT}$$

$$AT = \frac{166}{\tan 40^\circ}$$

$$\approx 197.83$$



$$d^2 = 197.83^2 + 246.10^2 - 2(197.83)(246.10)\cos 70^\circ$$

$$d = 257.67$$

$$\approx 258 \text{ m}$$

Are there any Homework Questions you would like to see on the board?

Last day's work: pp. 332-335 #3 – 6 [7, 14]

Today's Homework Practice includes:

pp. 338-339 #1 – 5, 8 – 13

p. 340 #2