2.2

Tuesday, September 10, 2019 4:15 PM

2.2 Using the Tangent Ratio to Calculate Lengths Name:

Focus : Date:

Learning Goal #1 : Determining the Length of a Side Opposite a Given Angle

Ex.1) Determine the length of XY to the nearest tenth of a centimetre.

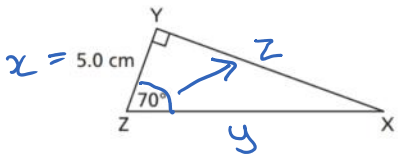
Find z.

$\tan Z = \frac{O}{A}$

$(5.0)\tan 70° = \frac{z}{5.0}(5.0)$

$(5.0)(2.747) = z$

$\therefore z = 13.7\text{ cm}$



Ex.2) Determine the length of XY to the nearest tenth of a centimetre.

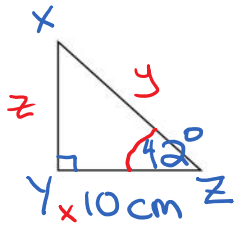
Find z.

$\tan Z = \frac{O}{A}$

$\tan 42° = \frac{z}{10}$

$10(\tan 42°) = z$

$\therefore z = 9.0\text{ cm}$



Learning Goal:	Emerging	Developing	Proficient	Extending
I can determine the length of a side opposite a given angle				

Learning Goal #2: Determining the Length of a Side Adjacent to a Given Angle

Ex.3) Determine the length of VX to the nearest tenth of a centimetre.

Find w.

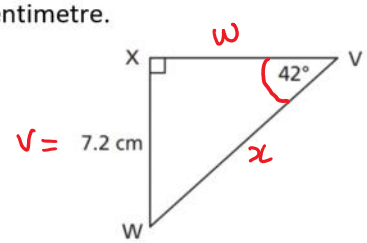
$\tan V = \frac{O}{A}$

$\tan 42° = \frac{7.2}{w}$

$w\tan 42° = 7.2$

$w = \frac{7.2}{\tan 42°}$

$\therefore w = 8.0\text{ cm}$



Ex.4) Determine the length of VX to the nearest tenth of a centimetre.

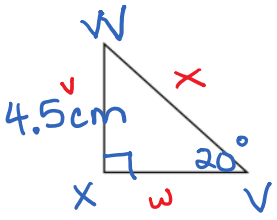
Find w.

$\tan V = \frac{o}{a}$

$\tan 20° = \frac{4.5}{w}$

$\therefore w = \frac{4.5}{\tan 20°}$

$\therefore w = 12.4$ cm.



Learning Goal:	Beginning	Progressing	Achieving	Excelling
I can determine the length of a side adjacent to a give angle				

Learning Goal #3: Using Tangent to Solve an Indirect Measurement Problem

Ex.5) At a horizontal distance of 200 m from the base of an observation tower, the angle between the ground and the line of sight to the top of the tower is $8°$. How high is the tower to the nearest metre? The diagram is not drawn to scale.

Find $\overline{AB}$ (tower)

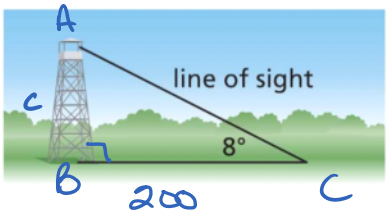
$\tan C = \frac{o}{a}$

$\tan 8° = \frac{c}{200}$

$200(\tan 8°) = c$

$\therefore 28m = c$

$\therefore$ Tower is 28m.



Learning Goal:	Beginning	Progressing	Achieving	Excelling
I can use tangent to solve an indirect measurement problem				

HW2.2 (p.81) #1,2 #3-5(a,c) #6,8,9,10,11 (all)