

Welcome Back MYP Math 9!

	Assignment Effort Grade (Circle One)	Comments (What was interesting or challenging?)
Monday Date: <u>12/4</u> Topic: <u>No Homework - Quiz 3.2</u>	0 1 2	
Tuesday Date: <u>12/5</u> Topic: <u>Cat in a tree</u>	0 1 2	
Wednesday Date: <u>12/5</u> Topic: <u>Create your own assessment</u>	0 1 2	
Thursday Date: _____ Topic: _____	0 1 2	
Friday Date: _____ Topic: _____	0 1 2	

Class Plan:

1) Finish:

"Create Your Own Real Life Application"

***Self Assess (& explain reasoning for earning score) ***Turn in!

2) Review Handout:

3) Done? Try other problems from previous handouts!

Unit 3: Similarity & Trigonometry

DO: Review Handout
(answers posted Weebly!)



Leo <3

Be cool! Work Together:)

(Finish "Create Your
Own Application"
Self-assess and turn
in up front)

Done? Study for Unit Test Friday

Directions: Use the Pythagorean Theorem, Right Triangle Trigonometric ratios (Sine, Cosine, and Tangent), The Sine Rule, and/or Triangle Angle Sum, to solve the problem.

1. When are **Sine, Cosine, and Tangent Ratios** used in solving for side lengths and angle measures? Record these ratios to refer to while solving.

2. When can **The Sine Rule** be used for solving for side lengths and angle measures? Record The Sine Rule to refer to while solving.

3. Find the ratio. (Round to 3 decimal places)

$$\cos 35^\circ = \underline{\hspace{2cm}}$$

4. Find the ratio. (Round to 3 decimal places)

$$\sin 26^\circ = \underline{\hspace{2cm}}$$

Solutions

Directions: Use the Pythagorean Theorem, Right Triangle Trigonometric ratios (Sine, Cosine, and Tangent), The Sine Rule, and/or Triangle Angle Sum, to solve the problem.

1. When are **Sine, Cosine, and Tangent Ratios** used in solving for side lengths and angle measures? Record these ratios to refer to while solving.

RIGHT TRIANGLE TRIGONOMETRIC RATIOS

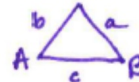
$$\sin \theta = \frac{\text{OPP}}{\text{HYP}} \quad \cos \theta = \frac{\text{ADJ}}{\text{HYP}} \quad \tan \theta = \frac{\text{OPP}}{\text{ADJ}}$$



2. When can **The Sine Rule** be used for solving for side lengths and angle measures? Record The Sine Rule to refer to while solving.

ALL TRIANGLES

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$



3. Find the ratio. (Round to 3 decimal places)

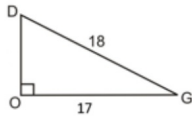
$$\cos 35^\circ = \underline{.819}$$

4. Find the ratio. (Round to 3 decimal places)

$$\sin 26^\circ = \underline{.438}$$

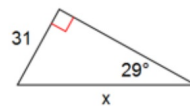
5. Solving Method(s)

Find the measure of angle G.



6. Solving Method(s)

Solve for the length of x.



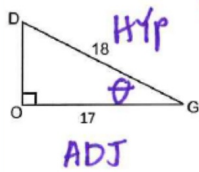
$$\frac{\sin 29^\circ}{1} = \frac{31}{x}$$

$$\frac{31}{\sin 29^\circ} = \frac{x \cdot \sin 29^\circ}{\sin 29^\circ}$$

$$\boxed{63.94 \approx x}$$

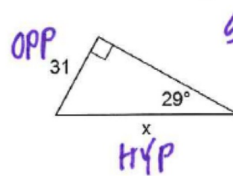
Solutions

4. Solving Method(s) COSINE RATIO
Find the measure of angle G.



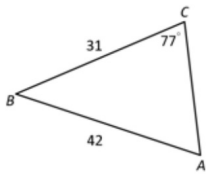
INVERSE
 $\cos \theta = \frac{\text{ADJ}}{\text{HYP}}$
 $\theta = \cos^{-1}\left(\frac{17}{18}\right)$
 $\theta \approx 19.2^\circ$

5. Solving Method(s) SINE RATIO
Solve for the length of x.

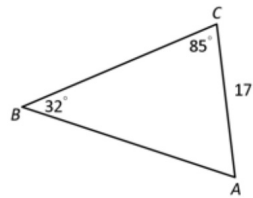


$\sin 29^\circ = \frac{31}{x}$
 $31 = x \cdot \sin 29^\circ$
 $\frac{31}{\sin 29^\circ} = \frac{x \cdot \sin 29^\circ}{\sin 29^\circ}$
 $65.9 \approx x$

7. Solving Method(s) _____
Find the measure of angle A.

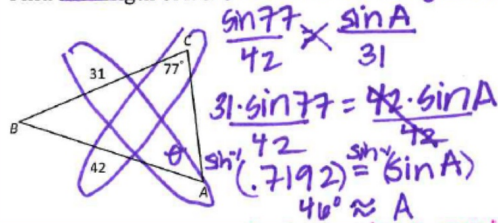


8. Solving Method(s) _____
Find the side length of AB.

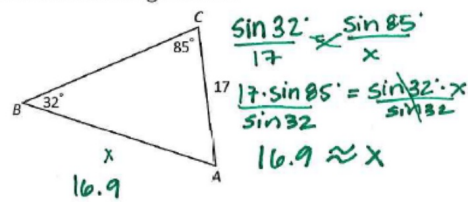


Solutions

. Solving Method(s) The Sine Rule
Find the length of AC.

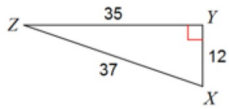


. Solving Method(s) The Sine Rule
Find the side length of AB.



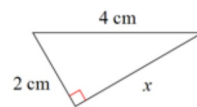
9. Solving Method(s)

Find $\sin Z$, $\cos Z$, and $\tan Z$.



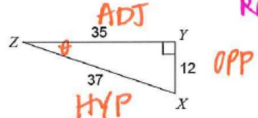
10. Solving Method(s)

Find the length x , and the measure of the angle between the sides of length 2 cm and 4 cm.



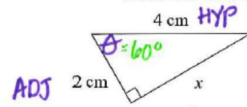
Solutions

Solving Method(s) SINE, COSINE, TANGENT
 Find $\sin Z$, $\cos Z$, and $\tan Z$. RIGHT TRIANGLE RATIOS



$\sin Z = \frac{12}{37}$
 $\cos Z = \frac{35}{37}$
 $\tan Z = \frac{12}{35}$

Solving Method(s) COSINE RATIO
 Find the length x , and the measure of the angle between the sides of length 2 cm and 4 cm. Pythagorean Thm

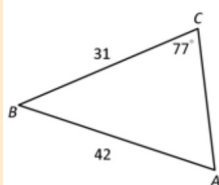


$\cos \theta = \frac{\text{ADJ}}{\text{HYP}} = \frac{2}{4}$
 $\cos^{-1}(\cos \theta) = \cos^{-1}\left(\frac{2}{4}\right)$
 $\theta = 60^\circ$

$x^2 + 2^2 = 4^2$
 $x^2 + 4 = 16$
 $-4 \quad -4$
 $x^2 = 12$
 $x = \sqrt{12}$
 $x = \sqrt{4 \cdot 3}$
 $x = 2\sqrt{3} \text{ cm}$
 $x \approx 3.5 \text{ cm}$

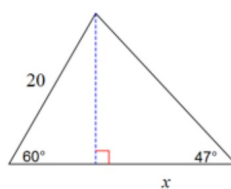
11. Solving Method(s)

Find the measure of angle B .



12. Solving Method(s)

Solve for the length of x .

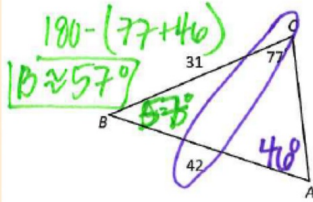


Solutions

. Solving Method(s)

Find the measure of angle B.

THE SINE RULE
TRIANGLE
ANGLE SUM



$$\frac{\sin 77}{42} = \frac{\sin A}{31}$$

$$31 \cdot \sin 77 = 42 \cdot \sin A$$

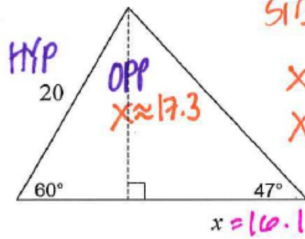
$$.719177905 = \sin A$$

$$46^\circ \approx A$$

. Solving Method(s)

Solve for the length of x.

SINE RATIO,
TANGENT RATIO



$$\frac{\sin 60^\circ}{1} = \frac{x}{20}$$

$$x = 20 \cdot \sin 60$$

$$x \approx 17.3$$

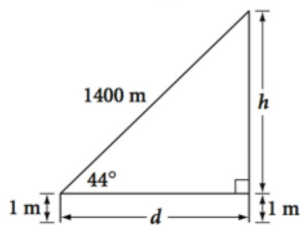
$$\frac{\tan 47^\circ}{1} = \frac{17.3}{x}$$

$$\frac{\tan 47^\circ}{\tan 47^\circ} = \frac{17.3}{x \cdot \tan 47^\circ}$$

$$16.1 \approx x$$

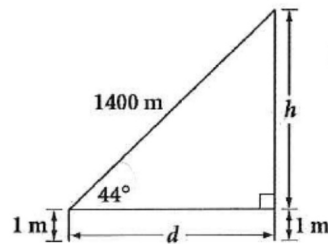
13. Solving Method(s) _____

A meteorologist Wanda Morris uses an angle-measuring device on a 1-meter-tall tripod to find the height of a weather balloon. She views the balloon at a 44° angle of elevation. A radio signal from the balloon tells her that it is 1400 meters from her device. How high is the balloon?



Solutions

A meteorologist Wanda Morris uses an angle-measuring device on a 1-meter-tall tripod to find the height of a weather balloon. She views the balloon at a 44° angle of elevation. A radio signal from the balloon tells her that it is 1400 meters from her device. How high is the balloon?



$$\frac{\sin 44^\circ}{h} = \frac{\sin 90^\circ}{1400}$$

$$\frac{\sin 44^\circ}{h} = \frac{1}{1400}$$

$$1400(\sin 44^\circ) = h$$
$$972.5 \text{ m} \approx h$$

$h + 1$ is about 973.5 meters

$$h + 1 \approx 973.5 \text{ m}$$