Teacher DeLaMora Subject __Algebra 2__ Dates__4/20-24/20 (Week 1)__   7-12 Weekly Planner   *Welcome to our Distance Learning Classroom!*

Student Time Expectation per day: 30 minutes

Content Area & Materials	Learning Objectives	Tasks	Check-in Opportunities	Submission of Work for Grades
Digital (If you can work digitally, please do. It will help to keep us all safe ☺) • Khan Academy (KA) • Summary Assignment Posted on Classroom Website and sent via Remind App.	<u>Suggested Order / Pacing</u> Right-Triangle Trigonometry • Pythagorean Theorem (Monday) • Special Right Triangles (Tuesday) • Trig Ratios (Wednesday) • Solving Triangles: Khan + Posted Video (Thursday) • Summary Assignment (Friday)	• Students are to complete the assigned **KhanAcademy assignments**. • After completing the KhanAcademy assignments, please complete the **summary assignment**	Mrs. De La Mora is available during the office hours at the times indicated below. • 12:00 – 2:00 pm Monday-Friday • Remind App CODE: 9b69ee • adelamora@tusd.net • Phone	• KA assignments will be recorded with the highest scores attained • Submit the summary assignment through a picture via Remind App. (Scored on Accuracy)
Hard Copy (Please only use this if you do not have technology available) • Notes + Examples • Assignments	<u>Suggested Order / Pacing</u> Right-Triangle Trigonometry • Pythagorean Theorem (Monday) • Special Right Triangles (Tuesday) • Trig Ratios (Wednesday) • Solving Triangles (Thursday) • Summary Assignment (Friday)	• Students are to **read** the lesson and examples provided • On a separate sheet of paper for each assignment, **complete** ALL problems showing your work.	Mrs. De La Mora is available during the office hours at the times indicated below. • 12:00 – 2:00 pm Monday-Friday • Remind App CODE: 9b69ee • adelamora@tusd.net • Phone	• Group your work together for your math class IN ORDER, and with the following labels clearly displayed: Student Name: Teacher Name: Class Name/Subject: Period: Assignment Week # • Assignments will be scored on accuracy.

Scheduled, *if possible,* • Discussion	Zoom classes can be held during tutoring hours. Schedule your meetings by visiting the class website: **kimballmath.wordpress.com** Discussions will revolve around discovery and application of concepts assigned for the week.
Scaffolds & Supports	KA assignments can often be re-tried to improve learning. Videos are utilized to demonstrate not only key concepts, but also frequent points of errors, helping students avoid pitfalls.

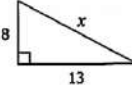| **Teacher Office Hours** *2 hours daily (all classes):* • Contact • Platform	**Monday** **12:00 – 2:00 pm**	**Tuesday** **12:00 – 2:00 pm**	**Wednesday** **12:00 – 2:00 pm**	**Thursday** **12:00 – 2:00 pm**	**Friday** **12:00 – 2:00 pm**

Monday

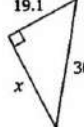*Answer **exactly**, using a **simplified radical** if needed.*

Do not convert to decimals unless the problem starts with a decimal. Round your answer to the nearest hundredth.

Main Ideas/Questions — **Notes**

Pythagorean Theorem
- Used to find the missing $\underline{side}$ of a $\underline{right}$ triangle.
- Sides $\underline{a}$ and $\underline{b}$ are called $\underline{legs}$.
- Side $\underline{c}$ is called the $\underline{hypotenuse}$.
- For any right triangle: $\underline{a^2 + b^2 = c^2}$
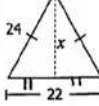
$$8^2 + 13^2 = x^2$$
$$64 + 169 = x^2$$
$$233 = x^2$$
$$\boxed{15.3 = x}$$

4.
$$19.1^2 + x^2 = 30.5^2$$
$$364.81 + x^2 = 930.25$$
$$x^2 = 565.44$$
$$\boxed{X = 23.8}$$
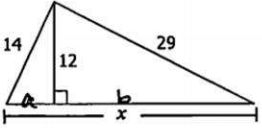
5.
$$11^2 + x^2 = 24^2$$
$$121 + x^2 = 576$$
$$x^2 = 455$$
$$\boxed{X = 21.3}$$

7.
$$12^2 + a^2 = 14^2$$
$$144 + a^2 = 196$$
$$a^2 = 52$$
$$a = 7.2$$

$$12^2 + b^2 = 29^2$$
$$144 + b^2 = 841$$
$$b^2 = 697$$
$$b = 26.4$$

$$X = 7.2 + 26.4 = \boxed{33.6}$$

Multistep problem. Find the missing side using Pythagorean theorem. Use this information to solve for the needed piece of information.
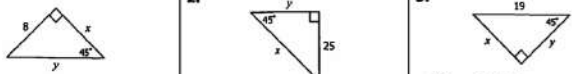
Tuesday

*Answer **exactly**, using a **simplified radical** if needed.*

45°-45°-90° Special Right △
- Leg = $\underline{X}$
- Hypotenuse = $\underline{X\sqrt{2}}$

The legs of a 45°-45°-90° triangle are always congruent.

1.
$$x = 8$$
$$y = 8\sqrt{2}$$

2.
$$x = 25\sqrt{2}$$
$$y = 25$$

3.
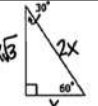$$\frac{19}{\sqrt{2}} = \frac{19\sqrt{2}}{2}$$
$$x = \frac{19\sqrt{2}}{2}$$
$$y = \frac{19\sqrt{2}}{2}$$
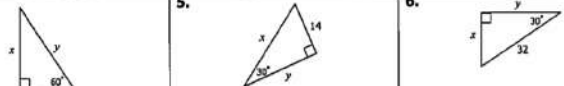
Problem — *Formula* $a\sqrt{2}$
$$19 = a\sqrt{2}$$
- Set problem = Formula
- Solve

30°-60°-90° Special Right △
- Shorter Leg = $\underline{X}$
- Longer Leg = $\underline{X\sqrt{3}}$
- Hypotenuse = $\underline{2X}$

The shorter leg is always opposite the 30° angle and the longer leg is always opposite the 60° angle.
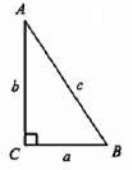
4.
$$x = 5\sqrt{3}$$
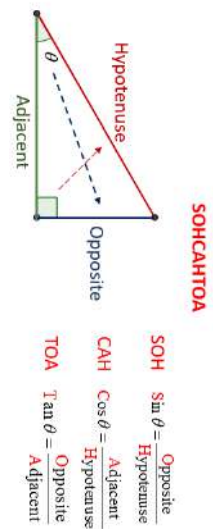$$y = 10$$

5.
$$x = 28$$
$$y = 14\sqrt{3}$$

6.
$$x = 16$$
$$y = 16\sqrt{3}$$

Wednesday

*Ratios must be exact answers. **Do not convert to decimals.***

TRIGONOMETRIC RATIOS

Each acute angle of a right triangle has the following trigonometric ratios:

SINE	The ratio of the leg opposite the angle to the hypotenuse.	• Sin A = a/c • Sin B = b/c
COSINE	The ratio of the leg adjacent to the angle to the hypotenuse.	• Cos A = b/c • Cos B = a/c
TANGENT	The ratio of the leg opposite the angle to the leg adjacent to the angle.	• Tan A = a/b • Tan B = b/a

* REMEMBER!! *

SOH CAH TOA

$Sin = \dfrac{opp}{hyp}$ $Cos = \dfrac{adj}{hyp}$ $Tan = \dfrac{opp}{adj}$

SOHCAHTOA

SOH $Sin\,\theta = \dfrac{Opposite}{Hypotenuse}$

CAH $Cos\,\theta = \dfrac{Adjacent}{Hypotenuse}$

TOA $Tan\,\theta = \dfrac{Opposite}{Adjacent}$

Always identify the angle of interest and the sides provided.

Student Name:
Teacher Name: De La Mora
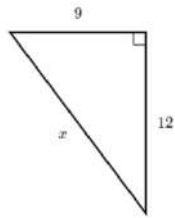**Class Name/Subject:**
Algebra 2
Period:
Assignment Week #: 1

NOTES: Complete all work on a separate sheet of paper. Include the heading provided on each worksheet you turn in. Show all work.

1.

- $\sin A = \dfrac{5}{13}$
- $\cos A = \dfrac{12}{13}$
- $\tan A = \dfrac{5}{12}$

- $\sin C = \dfrac{12}{13}$
- $\cos C = \dfrac{5}{13}$
- $\tan C = \dfrac{12}{5}$

2.

$9^2 + 12^2 = x^2$
$225 = x^2$
$15 = x$

- $\sin W = \dfrac{12}{15} = \dfrac{4}{5}$
- $\cos W = \dfrac{9}{15} = \dfrac{3}{5}$
- $\tan W = \dfrac{12}{9} = \dfrac{4}{3}$

- $\sin X = \dfrac{9}{15} = \dfrac{3}{5}$
- $\cos X = \dfrac{12}{15} = \dfrac{4}{5}$
- $\tan X = \dfrac{9}{12} = \dfrac{3}{4}$

1.

$\sin 28 = \dfrac{x}{19}$
$x = 19 \cdot \sin 28$
$\boxed{x = 8.9}$

2.

$\tan 41 = \dfrac{x}{32}$
$32 \cdot \tan 41 = x$
$\boxed{27.8 = x}$

3.

$\cos 21 = \dfrac{x}{26}$
$26 \cdot \cos 21 = x$
$\boxed{24.3 = x}$

4.

$\tan 55 = \dfrac{x}{8}$
$8 \cdot \tan 55 = x$
$\boxed{11.4 = x}$

Thursday

Round your answer to the nearest hundredth.

Steps for Solving
1. Identify ∡ of interest
2. Identify relationships of sides
3. Set up equation
4. Solve by inverse function

$\tan^{-1}\left(\tan x° = \dfrac{7}{5}\right)$
$x° = \tan^{-1}\left(\dfrac{7}{5}\right)$
$\boxed{x \approx 54.46°}$

EXAMPLE 1

$\tan x = \dfrac{9}{20}$
$x = \tan^{-1}(9/20)$
$\boxed{x = 24.2°}$

EXAMPLE 2

$\cos x = \dfrac{17}{32}$
$x = \cos^{-1}(17/32)$
$\boxed{x = 57.9°}$

Finding missing ANGLES with TRIGONOMETRY

$\sin^{-1}\ \sin x° = \dfrac{21}{28}$
$x° = \sin^{-1}\dfrac{21}{28}$
$x \approx 48.59°$

EXAMPLE 3

$\tan x = \dfrac{13}{18}$
$x = \tan^{-1}(13/18)$
$\boxed{x = 35.8°}$

$\sin x = \dfrac{21}{28}$
$x = \sin^{-1}(21/28)$
$\boxed{x = 48.6°}$

EXAMPLE 4

$\cos^{-1}\left(\cos x° = \dfrac{14}{22}\right)$
$x° = \cos^{-1}\left(\dfrac{7}{11}\right)$
$x \approx 50.48°$

Student Name:	Complete all work on a separate sheet of paper.
Teacher Name: **De La Mora**	**Show all work.** Include the heading provided on each
Class Name/Subject: **Algebra 2**	worksheet you turn in.
Period:	
Assignment Week #: **1**	

Monday

Tuesday

Find the value of x for each triangle.

In the right triangle shown, $\angle A = 30°$ and $AB = 8$.
How long is BC?
exactly, using a radical if needed.

Answer

Find the value of x for each triangle.
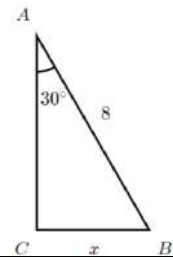
In the right triangle shown, $AC = CB = 7$.
How long is AB?
Answer exactly, using a radical if needed.

Find the value of x for each triangle.
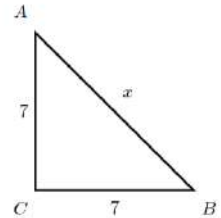
In the right triangle shown, $AC = BC$ and $AB = 6\sqrt{2}$
How long are each of the legs?
Answer exactly, using a radical if needed.

Find the value of x for each isosceles triangle.
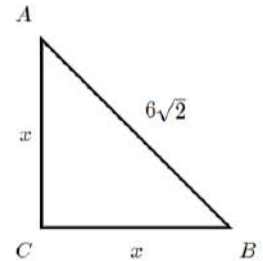
In the right triangle shown, $AC = BC$ and $AB = 4$.
How long are each of the legs?
Answer exactly, using a radical if needed.

Find the value of x for each isosceles triangle.
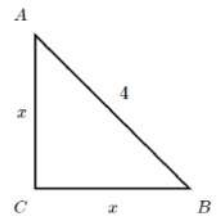
In the right triangle shown, $\angle A = 30°$ and $AB = 4\sqrt{3}$.
How long is AC?
Answer exactly, using a radical if needed.

Find the value of x in the isosceles triangle.
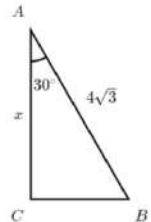
In the right triangle shown,

$\angle A = 30°$ and $AC = 12$.

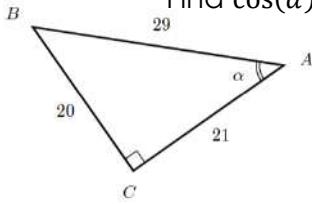**How long is AB?**

Answer exactly, using a radical if needed.
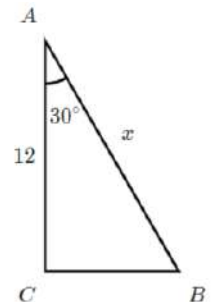
Student Name:
Teacher Name: **De La Mora**
Class Name/Subject: **Algebra 2**
Period:
Assignment Week #: 1

Complete all work on a separate sheet of paper. **Show all work.** Include the heading provided on each worksheet you turn in.
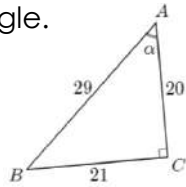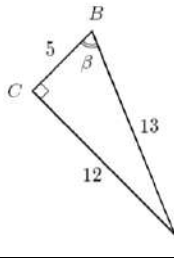
Wednesday

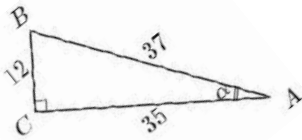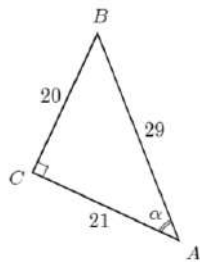|	
Find cos(α) in the triangle.	

Find tan(α) in the triangle.

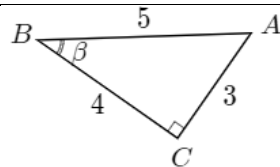Find sin (β) in the triangle.

Find sin(α) in the triangle.

Find sin(α) in the triangle.

Find cos(β) in the triangle.

Find tan(β) in the triangle.

Thursday

AC=
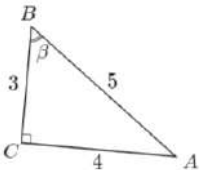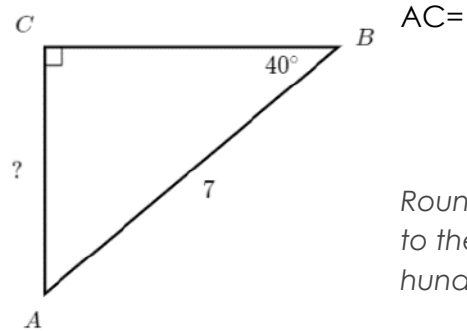
Round your answer to the nearest hundredth.

BC=

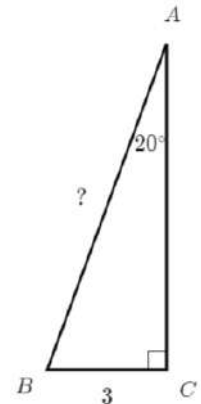*Round your answer to the nearest hundredth.*

AC=
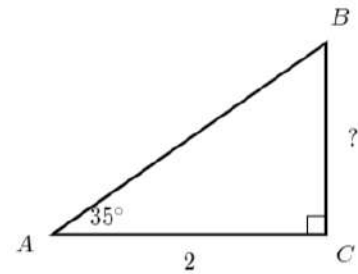
Round your answer to the nearest hundredth.
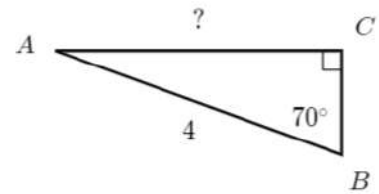

AB=

Round your answer to the nearest hundredth.

Summary Assignment Week#1

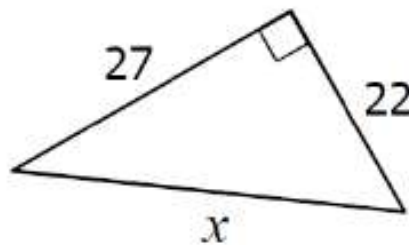**SHOW YOUR WORK on a <u>separate sheet of paper.</u>**

Student Name:	
Teacher Name:	
Subject:	Algebra 2
Period:	
Week:	#1

Use the Pythagorean Theorem and Trigonometric Ratios to identify the unknown values. Answers for lengths should be exact, using a radical if needed. Answers for angles should be rounded to the nearest hundredth.
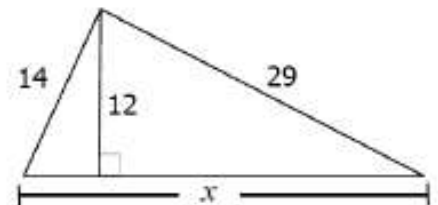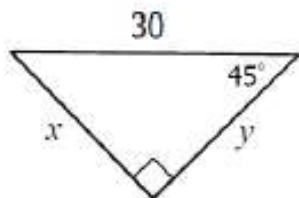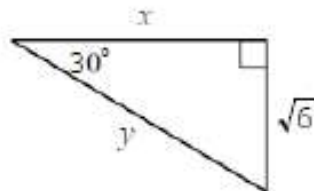
1.
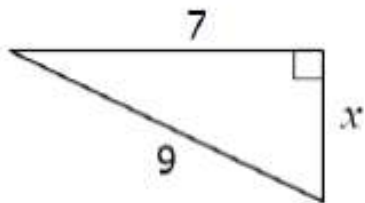
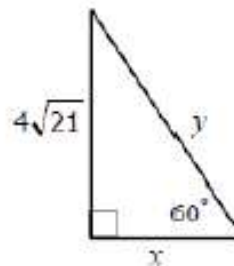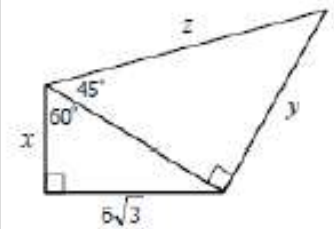

2.

3.

4.

5.

6.

7.

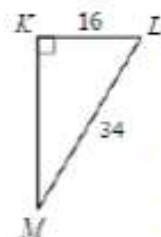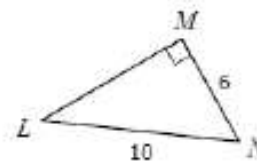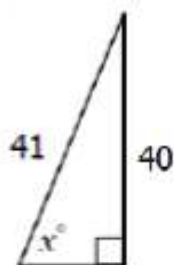**8.** Find each trig ratio as a simplified fraction.

- $\sin M = \underline{\quad}$
- $\cos M = \underline{\quad}$
- $\tan M = \underline{\quad}$

9. Find each trig ratio as a simplified fraction.

$\sin L = \underline{\qquad}$

$\tan N = \underline{\qquad}$

$\cos L = \underline{\qquad}$
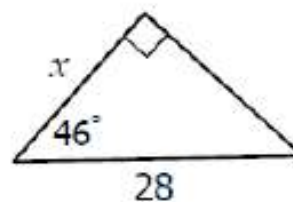
$\sin N = \underline{\qquad}$

10. Solve for x. Round to the nearest hundredth.

11. Solve for x. Round to the nearest hundredth.
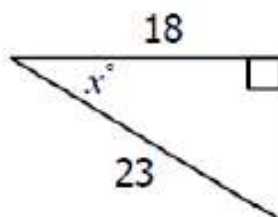
12. Find the value of x. Round to the nearest tenth.

13. Find m∠W.