

Syllabus for Pre-Calculus, Kingsgate, Friday 2025-2026

Lecture Date	Lesson	Topic	Handouts	Alg. II Review	Zoom Video
11-Sep	Ch. 1/2	Trigonometry/Inverse Trig.	Ch. 1 Ch. 2	Ch. 1	Video Ch. 1 Video Ch. 2b
18-Sep	Ch. 4/5	Solve Unknown/Arc Func.	Ch. 4/5	Ch. 2	Video Ch. 4 5
25-Sep	Ch. 6	Angles of Elev./Depression	Ch. 6	Ch. 3	Video Ch. 6
2-Oct	Ch. 7	Angles <0, >360 Degrees	Ch. 7	Ch. 4	Video Ch. 7
9-Oct	Ch. 8	Cofunctions/Neg. Angles	Ch. 8 Formula Sheet	Ch. 5	Video Ch. 5-13 Video Ch. 8
16-Oct	Test 1	Unit Test 1			
23-Oct	Ch. 9	Proving Trig. Identities	Ch. 9	Ch. 6	Video Ch. 9 Video Ch. 9 2024
30-Oct	Ch. 10	Verifying Trig. Identities	Ch. 10	Ch. 7	Video Ch. 10
6-Nov	Ch. 11	Sum/Difference Ident.	Ch. 11	Ch. 8	Video Ch. 11 Video Ch. 11 2024
13-Nov	Ch. 12	Double Angle/Half Angle	Ch. 12	Ch. 9	
20-Nov	Ch. 13	Law of Sines	Ch. 13	Ch. 10	Video Ch. 13
27-Nov		Thanksgiving Break			
4-Dec	Ch. 14	Law of Cosines	Ch. 14	Ch. 11	
11-Dec	Ch. 15	Radian Measure	Ch. 15	Ch. 12	Video Ch. 15
18-Dec		Christmas Break			
25-Dec		Christmas Break			
3-Jan		Christmas Break			
8-Jan	Ch. 16	Polar/Rect. Coordinates	Ch. 16	Ch. 13	Video Ch. 16
15-Jan	Test 2	Unit Test 2			
22-Jan	Ch. 17	Polar Eqs. And Graphs	Ch. 17	Ch. 14	Video Ch. 17
29-Jan	Ch. 18	Vectors	Ch. 18	Ch. 15	Video Ch. 18
5-Feb	Ch. 19	Functions, Relations, Domain/Range	Ch. 19	Ch. 16	Video Ch. 19
12-Feb	Ch. 20	Composite Functions	Ch. 20	Ch. 17	Video Ch. 20
19-Feb	Ch. 21	Logarithms	Ch. 21	Ch. 18	Video Ch. 21
26-Feb	Ch. 22	Natural Exponents and Ln Functions	Ch. 22	Ch. 19	Video Ch. 22
5-Mar	Test 3	Unit Test 3			
12-Mar	Ch. 23	Graphing Sin/Cos Functions	Ch. 23	Ch. 20	Video Ch. 23 Video Ch. 23 2025
19-Mar	Ch. 24	Graphing Sec/Csc Functions	Ch. 24	Ch. 21	Video Ch. 24
26-Mar	Ch. 25	Graphing Tan/Cot Functions	Ch. 25	Ch. 22	Video 22
9-Apr		Spring Break			
16-Apr	Ch. 26	Arithmetic Seq and Series	Ch. 26	Ch. 23	Video 23
23-Apr	Ch. 27	Geometric Seq and Series	Ch. 27	Ch. 24	Video 24
30-Apr	Ch. 28	Radicals and Abs Value	Ch. 28	Ch. 25	Video Ch. 28
7-May	Ch. 29	Inequalities/Rad/Abs Value	Ch. 29	Ch. 26	Video Ch. 29
14-May	Ch. 30	Limits	Ch. 30	Done!	Video Ch. 30
21-May	Test 4	Unit Test 4			

PreCalc2020

WEEKLY HOMEWORK

1A, B, C TEST 1

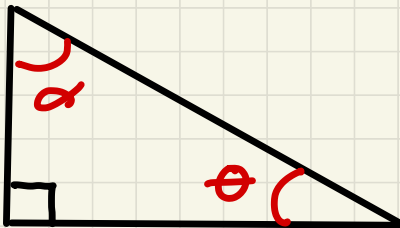
2A, B, C, D TEST 2

3A, B, C, D TEST 3 etc....

FORMULA & DEFINITIONS SHEETS, TOO!

PRE - CALCULUS CH 1 & CH 2

TRIGONOMETRY



Pythagorean Theorem

$$\sin \theta = \underline{\hspace{2cm}}$$

$$\cos \theta = \underline{\hspace{2cm}}$$

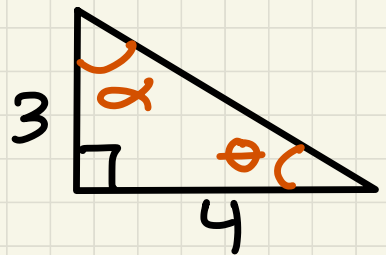
$$\tan \theta = \underline{\hspace{2cm}}$$

SOH - CAH - TOA

$$\sin \theta = \underline{\hspace{2cm}}$$

$$\cos \theta = \underline{\hspace{2cm}}$$

$$\tan \theta = \underline{\hspace{2cm}}$$

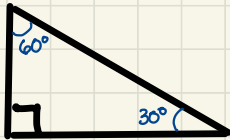


$$\sin \alpha = \underline{\hspace{2cm}}$$

$$\cos \alpha = \underline{\hspace{2cm}}$$

$$\tan \alpha = \underline{\hspace{2cm}}$$

SPECIAL TRIANGLES



$$\sin 30^\circ = \underline{\hspace{2cm}}$$

$$\cos 30^\circ = \underline{\hspace{2cm}}$$

$$\tan 30^\circ = \underline{\hspace{2cm}}$$

$$\sin 60^\circ = \underline{\hspace{2cm}}$$

$$\cos 60^\circ = \underline{\hspace{2cm}}$$

$$\tan 60^\circ = \underline{\hspace{2cm}}$$

$$\sin 45^\circ = \underline{\hspace{2cm}}$$

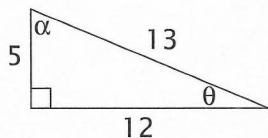
$$\cos 45^\circ = \underline{\hspace{2cm}}$$

$$\tan 45^\circ = \underline{\hspace{2cm}}$$

 It is very important that you memorize the fractional trig ratios for 30° , 45° , and 60° since they will be used in future lessons.

Practice Problems 1

Find the sine, cosine, and tangent of θ and α , and express the ratios in fraction form.



1. $\sin \theta =$

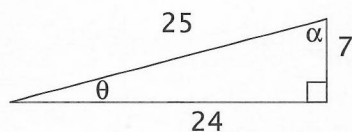
4. $\sin \alpha =$

2. $\cos \theta =$

5. $\cos \alpha =$

3. $\tan \theta =$

6. $\tan \alpha =$



7. $\sin \theta =$

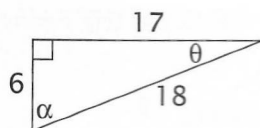
10. $\sin \alpha =$

8. $\cos \theta =$

11. $\cos \alpha =$

9. $\tan \theta =$

12. $\tan \alpha =$



13. $\sin \theta =$

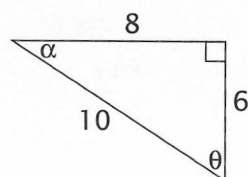
16. $\sin \alpha =$

14. $\cos \theta =$

17. $\cos \alpha =$

15. $\tan \theta =$

18. $\tan \alpha =$



19. $\sin \theta =$

22. $\sin \alpha =$

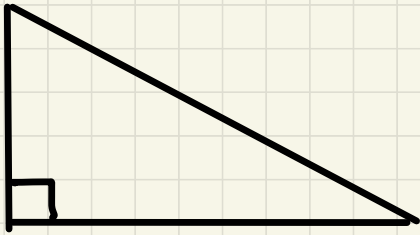
20. $\cos \theta =$

23. $\cos \alpha =$

21. $\tan \theta =$

24. $\tan \alpha =$

Ch. 2 - INVERSE TRIG. FUNCTIONS



INVERSE TRIG FUNCTIONS

$$\sin \theta = \underline{\hspace{2cm}}$$

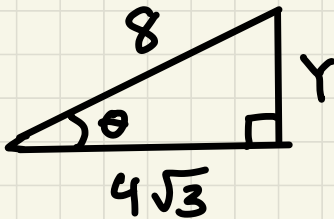
$$\csc \theta = \underline{\hspace{2cm}}$$

$$\cos \theta = \underline{\hspace{2cm}}$$

$$\sec \theta = \underline{\hspace{2cm}}$$

$$\tan \theta = \underline{\hspace{2cm}}$$

$$\cot \theta = \underline{\hspace{2cm}}$$



FIND THE MISSING SIDE
AND 6 TRIG. FUNCTIONS.

$$\sin \theta = \underline{\hspace{2cm}}$$

$$\csc \theta = \underline{\hspace{2cm}}$$

$$\cos \theta = \underline{\hspace{2cm}}$$

$$\sec \theta = \underline{\hspace{2cm}}$$

$$\tan \theta = \underline{\hspace{2cm}}$$

$$\cot \theta = \underline{\hspace{2cm}}$$

Since the new ratios are inverses or reciprocals of the sine, cosine, and tangent, they can also be expressed as shown below.

$$\csc \theta = \frac{1}{\sin \theta} \quad \sec \theta = \frac{1}{\cos \theta} \quad \cot \theta = \frac{1}{\tan \theta}$$

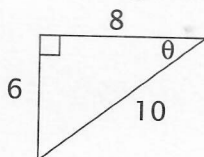
Example 2

Show that the relationships above are true using the ratios from example 1.

$\csc \theta = \frac{1}{\sin \theta}$	$\sec \theta = \frac{1}{\cos \theta}$	$\cot \theta = \frac{1}{\tan \theta}$
$\frac{5}{3} = \frac{1}{\frac{3}{5}}$	$\frac{5}{4} = \frac{1}{\frac{4}{5}}$	$\frac{4}{3} = \frac{1}{\frac{3}{4}}$
$\frac{5}{3} = \frac{1 \times \frac{5}{3}}{\frac{3}{5} \times \frac{5}{3}}$	$\frac{5}{4} = \frac{1 \times \frac{5}{4}}{\frac{4}{5} \times \frac{5}{4}}$	$\frac{4}{3} = \frac{1 \times \frac{4}{3}}{\frac{3}{4} \times \frac{4}{3}}$
$\frac{5}{3} = \frac{5}{3} \quad \checkmark$	$\frac{5}{4} = \frac{5}{4} \quad \checkmark$	$\frac{4}{3} = \frac{4}{3} \quad \checkmark$

Practice Problems 1

Find all six trig ratios for θ .



1. $\sin \theta =$

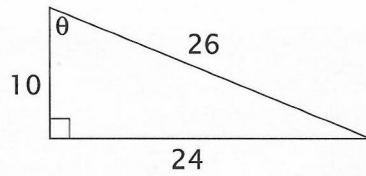
4. $\csc \theta =$

2. $\cos \theta =$

5. $\sec \theta =$

3. $\tan \theta =$

6. $\cot \theta =$



7. $\sin \theta =$

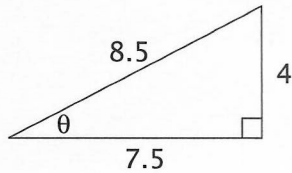
10. $\csc \theta =$

8. $\cos \theta =$

11. $\sec \theta =$

9. $\tan \theta =$

12. $\cot \theta =$



13. $\sin \theta =$

16. $\csc \theta =$

14. $\cos \theta =$

17. $\sec \theta =$

15. $\tan \theta =$

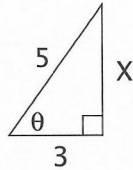
18. $\cot \theta =$

The other new concept in this lesson involves changing the fractions to decimals rounded to the ten-thousandths place. Look at the solutions for #1–6, and then go back and complete #7–18 by changing each fraction to a decimal.

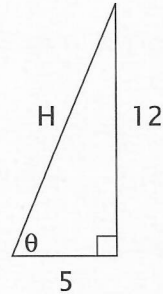
Practice Problems 2

Find the missing side, and then name all six trigonometric ratios of θ for each triangle. State your answers as fractions and as decimals. If an answer has a radical in it, leave it as a radical.

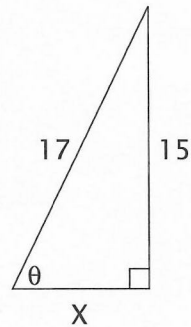
1.



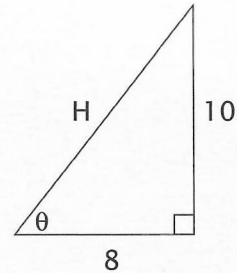
2.



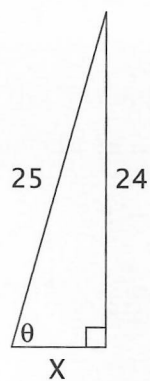
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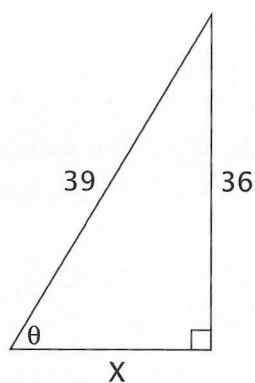
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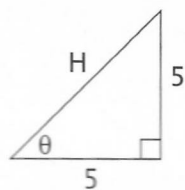
5.



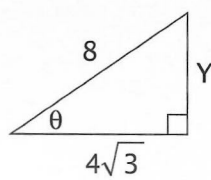
6.



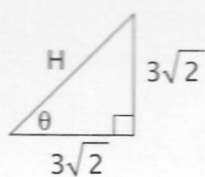
7.



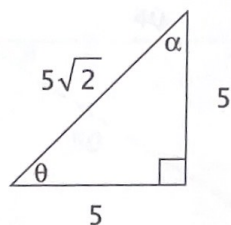
8.



9.



Find the sine, cosine, and tangent of θ and α , and express the ratios in fraction form.



1. $\sin \theta =$

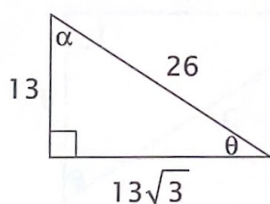
4. $\sin \alpha =$

2. $\cos \theta =$

5. $\cos \alpha =$

3. $\tan \theta =$

6. $\tan \alpha =$



7. $\sin \theta =$

10. $\sin \alpha =$

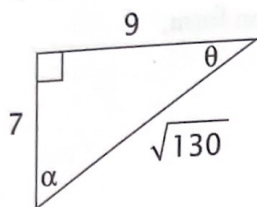
8. $\cos \theta =$

11. $\cos \alpha =$

9. $\tan \theta =$

12. $\tan \alpha =$

LESSON 1A



13. $\sin \theta =$

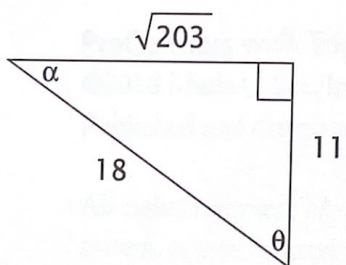
16. $\sin \alpha =$

14. $\cos \theta =$

17. $\cos \alpha =$

15. $\tan \theta =$

18. $\tan \alpha =$



19. $\sin \theta =$

22. $\sin \alpha =$

20. $\cos \theta =$

23. $\cos \alpha =$

21. $\tan \theta =$

24. $\tan \alpha =$

write in vertex form
and in standard form.

