

keep scrolling to
get a sneak peek!

Help your Pre Calculus students practice using the sum and difference trig formulas. Students will be eager to get the self-checking benefits from this digital matching activity!

SUM & DIFFERENCE TRIG FORMULAS

Directions: Use the sum and difference formulas to find the exact value. Match the question number to the correct answer by typing it into the column to the right of the answers.

#	Question	Answer	Type the matching question numbers here
1	$\sin\left(\frac{\pi}{3} + \frac{\pi}{6}\right)$	$\frac{\sqrt{2} + \sqrt{6}}{4}$	
2	$\cos\left(\frac{3\pi}{4} - \frac{\pi}{6}\right)$	$-2 + \sqrt{3}$	
3	$\tan\left(\frac{\pi}{4} + \frac{\pi}{3}\right)$	$-2 - \sqrt{3}$	
4	$\sin\left(\frac{5\pi}{6} - \frac{\pi}{4}\right)$	1	
5	$\cos\left(\frac{2\pi}{3} + \frac{\pi}{6}\right)$	$-\frac{1}{2}$	
6	$\tan\left(\frac{2\pi}{3} - \frac{\pi}{4}\right)$	$\frac{\sqrt{6} - \sqrt{2}}{4}$	
7	$\sin\left(\frac{\pi}{2} - \frac{\pi}{6}\right)$	$\frac{-\sqrt{6} + \sqrt{2}}{4}$	
8	$\cos\left(\frac{\pi}{4} + \frac{\pi}{6}\right)$	$-\frac{\sqrt{3}}{2}$	
9	$\tan\left(\frac{5\pi}{6} - \frac{\pi}{3}\right)$	$\frac{\sqrt{3}}{2}$	
10	$\sin\left(\frac{5\pi}{6} + \frac{\pi}{4}\right)$		

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Self-Checking

Why do you need this?



It's self-checking! Your students will instantly know if they are correct or not.



Help your students practice this essential math skill.



Your students will be so engaged trying to figure out the connection path!

Sum & Difference Trig Formulas Matching Activity

FINDING EXACT VALUES SUM & DIFFERENCE TRIG FORMULA

Directions: Use the sum and difference formulas to find the exact value. Match the question number to the correct answer by typing it into the column to the right of the answers.

#	Question	Answer	Type the matching question numbers here
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3	$\tan\left(\frac{\pi}{4} + \frac{\pi}{3}\right)$	$-2 - \sqrt{3}$	
4	$\sin\left(\frac{5\pi}{6} - \frac{\pi}{4}\right)$	1	
5	$\cos\left(\frac{2\pi}{3} + \frac{\pi}{6}\right)$	$-\frac{1}{2}$	
6	$\tan\left(\frac{2\pi}{3} - \frac{\pi}{4}\right)$	$\frac{\sqrt{6} - \sqrt{2}}{4}$	
7	$\sin\left(\frac{\pi}{2} - \frac{\pi}{6}\right)$	$\frac{-\sqrt{6} + \sqrt{2}}{4}$	
8	$\cos\left(\frac{\pi}{4} + \frac{\pi}{6}\right)$	$-\frac{\sqrt{3}}{2}$	

Sum & Difference Trig Formulas *includes:*

FINDING EXACT VALUES SUM & DIFFERENCE TRIG FORMULA

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4	$\sin(\frac{5\pi}{6} - \frac{\pi}{4})$	1	
5	$\cos(\frac{2\pi}{3} + \frac{\pi}{6})$	$-\frac{1}{2}$	
6	$\tan(\frac{2\pi}{3} - \frac{\pi}{4})$	$\frac{\sqrt{6} - \sqrt{2}}{4}$	
7	$\sin(\frac{\pi}{2} - \frac{\pi}{6})$	$\frac{-\sqrt{6} + \sqrt{2}}{4}$	
8	$\cos(\frac{\pi}{4} + \frac{\pi}{6})$	$-\frac{\sqrt{3}}{2}$	

- ✓ 10 self-checking problems
- ✓ an answer key
- ✓ a worksheet for students to show work on

Sum & Difference Trig Formulas

standards covered:

CCSS: HSF-TF.C.9

TEKs: P.5.M

VA SOLs: EI.T.7

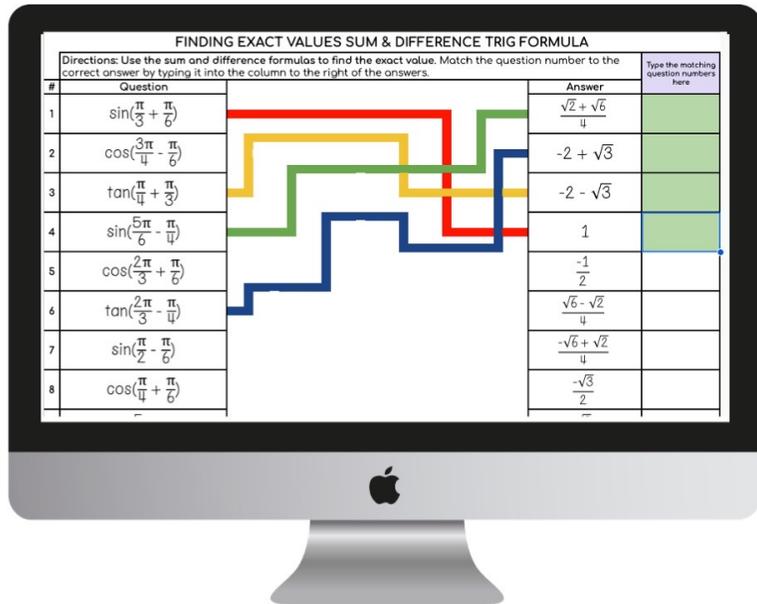
Transformations of Quadratic Functions

Directions: Identify the transformations of each quadratic function. Match the question number to the correct answer by typing it into the column to the right of the answers.

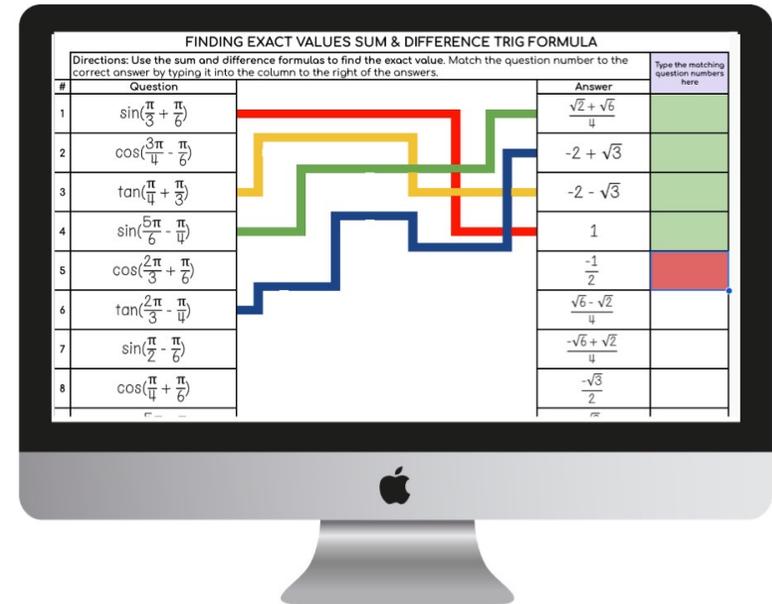
#	Question	Answer	Type the matching question numbers here
1	$f(x) = (x - 1)^2$	* Horizontal shift 4 units left	4
2	$f(x) = -x^2 + 5$	* Vertical stretch by a factor of 3 * Vertical shift 9 units down	7
3	$f(x) = -\frac{1}{2}x^2 - 6$	* Horizontal shift 1 unit right	1
4	$f(x) = (x + 4)^2$	* Vertical stretch by a factor of 2 * Horizontal shift 1 unit left * Vertical shift 4 units down	8
5	$f(x) = 2x^2 + 7$	* Vertical shrink by a factor of 1/2 * Horizontal shift 5 units right * Vertical shift 1 unit up	9
6	$f(x) = (x - 2)^2 + 3$	* Reflection over the x-axis * Vertical shift 5 units up	
7	$f(x) = 3x^2 - 9$	* Reflection over the x-axis * Vertical shrink by a factor of 1/2 * Vertical shift 6 units down * Horizontal shift 2 units right	

Sum & Difference Trig Formulas

If they answer it correctly, a path of pixels will appear connecting the question to the answer.

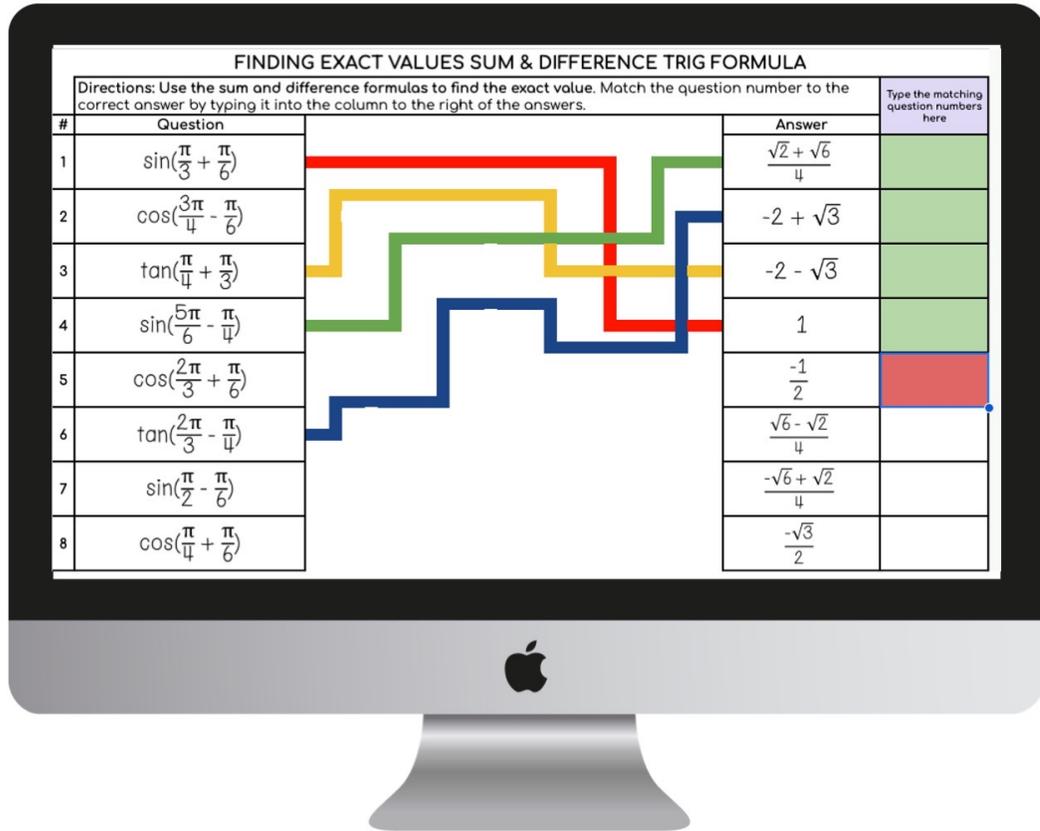


If they answer it incorrect, the answer box will turn red & no path will appear.



Your students will *love* trying to figure out the connection path WHILE doing math!

how to use this resource



This is a great activity to use when reviewing using the sum & difference formulas to find exact trig values.

It can be used right after teaching the concept, independent practice, or as homework.

This is also a **substitute-friendly** assignment!

You may also enjoy ...

SUM & DIFFERENCE ANGLE IDENTITIES

Algebra 2 Guided Notes

DIFFERENCE ANGLE IDENTITIES		SUM & DIFFERENCE ANGLE IDENTITIES	
Difference Identities		Sum Identities	
$\sin(A - B) = \sin A \cos B - \cos A \sin B$	$\cos(A - B) = \cos A \cos B + \sin A \sin B$	$\sin(A + B) = \sin A \cos B + \cos A \sin B$	$\cos(A + B) = \cos A \cos B - \sin A \sin B$
$\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$	$\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$		

Directions: Prove the identity.

1. $\cos(\frac{\pi}{2} - \theta) = \sin \theta$
 $\cos(\frac{\pi}{2}) \cos \theta + \sin(\frac{\pi}{2}) \sin \theta = \sin \theta$
 $0 \cdot \cos \theta + 1 \cdot \sin \theta = \sin \theta$
 $\sin \theta = \sin \theta \checkmark$

2. $\sin(\pi - \theta) = \sin \theta$

Answer key included

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TRIGONOMETRY

Algebra 2 Guided Notes

GRAPHING SINE & COSINE

Directions: Draw and label the special right triangle. The trigonometric function is positive.

30-60-90

FINDING EXACT TRIGONOMETRIC VALUES

Directions: Find the exact value of the trigonometric function.

1. If $\sin \theta = \frac{\sqrt{3}}{2}$, $\cos \theta < 0$, then $\tan \theta = -\frac{\sqrt{3}}{1} = -\sqrt{3}$

3. If $\tan \theta = 1$, $\sin \theta > 0$, then $\sin \theta = \frac{\sqrt{2}}{2}$

WRITING TRIGONOMETRIC EQUATIONS FROM GRAPHS

Directions: Write 2 corresponding equations for the graph.

Amplitude: 1
 Period: 2π
 Phase Shift: right $\frac{\pi}{2}$
 Midline: $y = 3$
 $y = \sin(x - \frac{\pi}{2}) + 3$

Answer key included

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END OF YEAR REVIEW TASK CARDS

Trigonometry

29 Solve the equation and give the general solution.

$$2\cos \theta + \sqrt{2} = 0$$

24 Write 2 different equations of the given graph.

36 Identify the amplitude, period, phase shift and midline, if possible.

$$y = 2\cot\left(\frac{\pi x}{4}\right) + 1$$

3 Prove: $\sin x \sec x = \tan x$

36 Skill Based Review Task Cards

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Free Algebra Activities!

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check it out!

Answer Key
Name: _____ Date: _____
ADDING & SUBTRACTING RATIONAL EXPRESSIONS
Directions: Add or subtract the rational expressions. Show your work.

ANSWER KEY
Name: _____ Date: _____
SOLVING SYSTEMS OF EQUATIONS
Directions: Solve systems of equations using substitution or elimination. Check your solution.

ANSWER KEY
Name: _____ Date: _____
MULTIPLYING & DIVIDING RATIONAL EXPRESSIONS
Directions: Multiply or divide the rational expressions. Show your work.

Rational Expression Operations - Addition & Subtraction
Directions: Answer each question and type the question number with the matching answer in the answer column to the right.

#	Question	Answer	Type the matching question numbers here
1	$\frac{5}{x} + \frac{3}{x+1}$	$\frac{2x+1}{x+2}$	
2	$\frac{2}{x+4} - \frac{x^2}{x^2-16}$	$-\frac{1}{x^2-1}$	
3	$\frac{x+2}{x^2+4x+4} + \frac{2x}{x+2}$	$\frac{2x^2+2x+5}{x^2+x-2}$	
4	$\frac{x}{x-2} + \frac{3}{x-1}$	$-\frac{x^2+2x-8}{x^2-16}$	
5	$\frac{x}{4x+8} - \frac{1}{x^2+2x}$	$\frac{8x+5}{x^2+1}$	
6	$\frac{x+2}{x-1} + \frac{x-1}{x+2}$	$\frac{x^2-3x+7}{x^2-4}$	
7	$\frac{2x+1}{x^2-4} + \frac{x-3}{x+2}$	$\frac{x^2+2x-6}{x^2-3x+2}$	
8	$\frac{x^2+2x}{x^2-1} - \frac{x+1}{x-1}$	$\frac{x-2}{4x}$	

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hey there!

My name is Malia and I'm passionate about making learning and practicing math fun. I love creating engaging math resources for my students and I hope your students enjoy this activity activity too!

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