



Math Summer Assignment for
Trigonometry
Wall Township Math Department
Optional Summer Assignment



- ★ This summer assignment is intended to prepare you for the math course above.
- ★ You will find examples and video links to help you complete the practice.

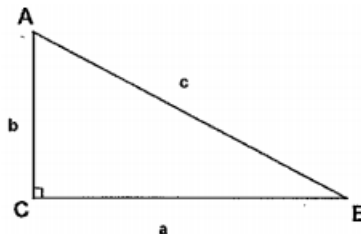
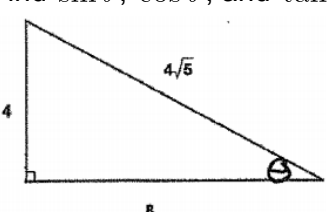
Skill 1: Trigonometry



Helpful Video Link:

- [Trigonometry - How To Solve Right Triangles](#)
- [Trigonometry For Beginners!](#)

Practice:

1)	<p>Find the missing sides and angles using the triangle to the right and the information given. Keep all side lengths in simplest radical form and round angles to the nearest degree.</p> <p>$A = \underline{\hspace{2cm}}$ $a = 5$</p> <p>$B = 60^\circ$ $b = \underline{\hspace{2cm}}$</p> <p>$C = 90^\circ$ $c = \underline{\hspace{2cm}}$</p>	
2)	<p>A large totem pole near Kalama, Washington is 184 ft tall. On a particular day at noon it casts a 225 ft shadow. Draw a diagram modeling the situation. What is the sun's angle of elevation at noon?</p>	
3)	<p>Find $\sin \theta$, $\cos \theta$, and $\tan \theta$.</p> 	
4)	<p>Suppose a tree 50 feet in height casts a shadow of length 60 feet. What is the angle of elevation from the end of the shadow to the top of the tree with respect to the ground? Sketch a diagram and solve.</p>	
5)	<p>If a 137 feet tall tree casts a shadow of 237.435 ft, what is the angle of elevation of the sun? Draw a diagram and solve.</p>	

Skill 2: Logarithms



Helpful Video Link:

- [Expanding Logarithmic Expressions](#)
- [Condensing Logarithmic Expressions](#)
- [Logarithms - The Easy Way!](#)
- [Solving Logarithmic Equations](#)

Practice:

Expand each logarithmic expression			
1)	$\log_6 \frac{u^2}{v^2}$	2)	$\log_6(u^2v^3)$
Condense each logarithmic expression.			
3)	$6\log_6 7 - 2\log_6 11$	4)	$5\log_7 8 + 3\log_7 5$
Evaluate.			
5)	$\log_5 125$	6)	$\log_2 1$
Solve.			
7)	$\log_{13}(3 - 5x) = \log_{13}(2x + 9)$	8)	$\ln(-3x - 5) = \ln(-5x + 7)$

Skill 3: Exponentials



Helpful Video Link:

- [Introduction to exponential decay](#)
- [Solving Exponential Equations](#)
- [How to graph an exponential function using a table](#)

Practice:

For questions 1 to 6, identify if the function represents exponential growth or decay or neither.			
1)	$y = 3(-2)^x$	2)	$y = 3.2(0.2)^x$
3)	$y = 0.5(1.2)^x$	4)	$y = 0.4(2)^x$
5)	$f(x) = 3\left(\frac{3}{4}\right)^x$	6)	$f(x) = \frac{4}{5}x$
7)	Solve for x: $4^{4x} = 16^{x+1}$	8)	Graph $f(x) = 2^{x-2}$

Skill 4: Quadratics



Helpful Video Link:

- [Factoring Using The Greatest Common Factor \(GCF\)](#)
- [How To Solve Quadratic Equations By Factoring](#)
- [Learn The Quadratic Formula in 10 min](#)
- [How To Find The Vertex of a Parabola - Standard Form, Factored & Vertex Form](#)

Practice:

Factor the following.	
1) $35m^3n + 105m^2n^3$	2) $10x^2 - 42x + 4$
Solve for x.	
3) $x^2 + 2x - 15 = 0$	4) $2x^2 + 5x + 2 = 0$
Determine the vertex of the following.	
5) $f(x) = -3(x + 2)^2 - 1$	6) $f(x) = x^2 - 6x + 3$

Skill 5: Functions



Helpful Video Link:

- [❖ Function Notation ❖](#)
- [Composite Functions](#)
- [Synthetic Division of Polynomials](#)

Practice:

1)	If $g(x) = x^2 + 3x - 5$, what is $g(3)$?	2)	Subtract $(-7x^2 - 3x - 5) - (x^2 - 8x - 6)$
Evaluate the following for when $x = -1$.			
3)	$105x^3 + 175x^2 - 75x - 125$	4)	$96x^3 - 84x^2 + 112x - 98$
Given functions $f(x) = x + 3$ and $g(x) = x^2 + x - 6$ perform the indicated operation and state the resulting domain.			
5)	$f - g$	6)	$f(g(x))$
7)	Use synthetic division to determine if the divisor is a factor: $3x^3 - 16x^2 - 72 \div (x - 6)$		
8)	Use synthetic division to determine if the divisor is a factor: $5x^3 + 18x^2 + 7x - 6 \div (x + 3)$		