MHF 4UI   Learning Goals Unit 5 – Technical Trigonometry

- **Solve Trig equations given a restricted domain.**
- **Solve Trig equations in both degrees and radians.**
- **Prove Trig Identities using left side/right side**
- **Use Trig Identities to evaluate expressions.**
- **Use Trig Identities to solve equations.**
- **Graph Trig functions.**
- **Use Trig functions to solve problems.**

Topic	I have reviewed it.	I have done questions
The Unit Circle		
Determine the trig ratio of a special angle in degrees or radians without a calculator		
Solving Trig Equations		
(i) Solving Trig Equations, consider restrictions		
(ii) Solve with calculator in degrees		
(iii) Solve using the unit circle in degrees (no calculator)		
(iv) Solve with calculator in radians		
(v) Solve using the unit circle in radians (no calculator)		
Trig Identities		
(i) Grade 11 Identities + Reciprocal Pythagorean Identities		
(ii) Addition / Subtraction Identities		
(iii) Symmetry Identities		
(iv) Complementary Identities		
(v) Double Angle Identities		
Using Trig Identities to:		
(i) "prove" complicated identities using left side / right side		
(ii) solve trig equations		
(iii) evaluate the sine and cosine ratios of $\frac{\pi}{12}$'s and $\frac{\pi}{8}$'s		
Trig Functions		
(i) Graph $y = \sin(x)$ and $y = \cos(x)$		
(ii) Applications		
1) position analysis - determine position, $m(t)$ - solve for time, t		
2) average rate of change $= \dfrac{\Delta y}{\Delta x}$		
3) instantaneous rate of change = slope of secant PQ $\underline{P(x,\ y)}$ $\mid$ $\underline{Q(x + h,\ y)}$ $\mid$ $\underline{\text{Slope of Secant PQ}}$		
Proper Rate of Change Final Statements: $\therefore$ the <u>thing that's changing</u> is (**increasing** or **decreasing**) at <u>positive value</u> <u>correct units</u>		
(iii) Graph $y = \csc(x)$ and $y = \sec(x)$ functions		
(iv) Graph $y = \tan(x)$ and $y = \cot(x)$ functions		