**MCR 3UI** **Unit 6: Trigonometric Functions**

| Day | text | Topic | Practice | Done✓ |
|---|---|---|---|---|
| 1 | 5.3 | Periodic Behaviour<br>- Cycle, period, amplitude | p. 359 #1, 2, 3b, 4, 5 | |
| 2 | 5.4 | Graphs of Sinusoidal Functions | Handout | |
| 3 | 5.5 | Vertical Stretches of Sinusoidal Functions<br>$y = a\sin\theta$ & $y = a\cos\theta$ | p. 374 #1, 7a, 10a, 11a | |
| 4 | | Horizontal Stretches of Sinusoidal Functions<br>$y = \sin(k\theta)$ & $y = \cos(k\theta)$ | p. 374 #2 all – just in degrees, not radians, 3-6(b only), 8b | |
| 5 | 5.6 | **QUIZ**<br>Translations of Sinusoidal Functions<br>- $y = \sin(\theta - p) + q$<br>- $y = \cos(\theta - p) + q$ | p. 387 #1abceh, 2abdeg, 3ad, 5ab, 6ab | |
| 6 | 5.6 | Combinations of Transformations<br>- $y = a\sin k(\theta - p) + q$<br>- $y = a\cos k(\theta - p) + q$ | Pg. 387:<br>#5cd, #7bcd, #8d,<br># 9 (P is 360˚, 180˚, 720˚and 90˚ respectively and H is 180 and 90˚ respectively),<br>#11b ($\pi$ = 180˚, $2\pi$ = 360˚, $3\pi$ = 540˚) | |
| 7 | | Applications/Problem Solving Using Trig Functions<br>(Ferris Wheel, Tides, Climate, etc.) | Pg. 388:<br>#12a - d (assume t = 0 is low tide), #14, #16 & Worksheet: Trig Graphing Applications | |
| 8 | 5.8 | Solving Trig Equations | Page 408 #2, 3acef, 5abc. Solve in degrees. | |
| 9 | 5.8 | Solving Trig Equations (Continued) | Page 408-409 #3bdg, 5def, 11(factor by grouping).<br>Solve in degrees. | |
| 10 | | Review | p. 412 – 417 #15, 16, 17, 18, 19, 20 degrees only, 21 (a-period=540˚, b – period=180˚), 22, 24, 25ab, 26, 27b ($\pi/4=4^o$, $\pi/2=90^o$), 30, 31, 35-37 (in degrees – teacher will provide answers for 35,36, 37<br>p. 418 #4cd, 7ab,c(phase shift 45˚), 8a, 12(in degrees, teacher will provide answers) (eoo), 9 | |
| 11 | | **UNIT TEST** | | |

A few more review questions

| Function | Domain | Range | Amplitude | Period | Phase Shift |
|---|---|---|---|---|---|
| $y = 2\sin(x - 90^o)$ | | | | | |
| $y = \frac{1}{2}\cos(x + 90^o)$ | | | | | |
| $y = \frac{1}{2}\sin(\frac{1}{2}x - 180^o) - 2$ | | | | | |
| $y = 2\cos\frac{1}{2}(x - 180^o) + 1$ | | | | | |
| $y = -2\cos(3x - 180^o) + 2$ | | | | | |

NOTE: Many answers in the back of the textbook are in radians rather than degrees. Please see your teacher for answers measured in degrees. (For your interest: $180^o = \pi$)

**Essential Skills: By the end of this unit I will be able to….**

- ☐ Demonstrate an understanding of periodic behavior
- ☐ Given an graph or equation, be able to identify period, phase shift and amplitude
- ☐ Graph sinusoidal functions including transformations
- ☐ Determine the equation of a sinusoidal function (from graph and given key info.)
- ☐ Solve Trigonometric Equations
- ☐ Solve real-world problems involving sinusoidal functions