

## Midterm Review

*Instructor:* Joshua Miller**Topics to Study:****1 Chapter**

- 1.1: Unit conversions between  $D^{\circ}M'S''$ , degrees, and radians.
- 1.1: Circle math problems related to area of sector, arc-length, radius, and angle measure.
- 1.2: If given information on a right triangle (given two side lengths or a trig ratio), find the all 6 trigonometric ratios. Example 1.2.3 & 1.2.4, ie Exercises 7-14.
- 1.2: Problems similar to Exercises 1-3 & 4-6.
- 1.3: Solving SS problem, example 1.3.3 and solving SA problem, example 1.3.1.
- 1.3: Applications to angles of elevation/depression.
- 1.3: Problems similar to Exercise 3,4, 6, 7, 8.

**2 Chapter**

- 2.1: Vector arithmetic, equation of a circle and completing the square, Parallel/Perpendicular lines. Solving problems similar to Exercise 1,2,6,11,17,18,19.
- 2.2: Be able to find trigonometric values given varying information regarding the angle. Problems similar to Exercises 1-3, 9,10,12, 32-35. Using periodicity of triangles to find  $\sin \alpha$  and  $\cos \alpha$  similar to Exercises 20-24, 30.
- 2.3: Be able to verify identities.
- 2.4: Given a function, give all information, included but not limited to, phase-shift, period, max, min, zeroes, y-int, increasing/decreasing intervals, etc. Solving problems similar to exercises 1-10.
- 2.5: Given a general sinusoidal graph, give all of the information, included but not limited to, phase-shift, period, max, min, zeroes, y-int, increasing/decreasing intervals, etc. Solving problems similar to exercises 2-10.
- 2.6: Be comfortable using inverse trigonometric functions. Solving problems similar exercises 13-19.
- 2.7: Solving elementary trigonometric functions, solving using substitution, and solving equations using more than one trigonometric functions. Solving problems similar to Exercise 1-25. Problems similar to homework.

**3 Chapter**

- 3.1 Finding unit vectors, dot & skew product, Pythagoras Generalized theorem, Relations to Sine, Cosine, and area. Solving problems similar to Exercises 1-7, 16-19. Problems similar to ones in notes and homework.