Exam 1 - Chapter 7 (7.1-7.4)
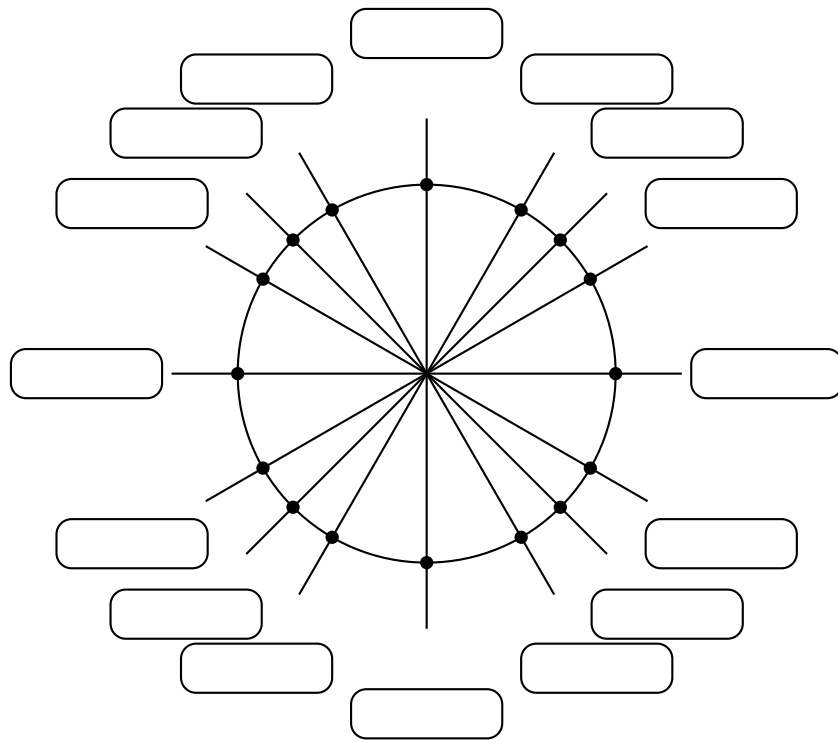
Formulas (given on test)

Formulas:

Arc length $= r\theta$ Sector area $= \frac{1}{2}r^2\theta$

Angular speed $= \dfrac{\text{angle}}{\text{time}}$ Linear speed $= \dfrac{\text{arc length}}{\text{time}}$

7.1: Angles

- Drawing angles in standard position

- Positive and negative angles

- Quadrants

- Converting between degrees and radians

- Coterminal angles: Add or subtract multiples of $\dfrac{\pi}{2}$ or $360°$

- Arc length

- Sector area

- Angular speed

- Linear speed

- **Word problems** involving arc length, sector area, angular speed and linear speed

7.2: Right triangle trig

- $\sin(t)$, $\cos(t)$, $\tan(t)$, $\csc(t)$, $\sec(t)$, $\cot(t)$ (SohCahToa)

- Evaluate a trig function given a right triangle with 2 side lengths given

- Evaluate trig functions for special angles $\dfrac{\pi}{4}$, $\dfrac{\pi}{3}$, $\dfrac{\pi}{6}$: **Know your two special triangles**

- Cofunctions of complementary angles are equal

- Pythagorean theorem

- **Word problems** finding a length given another side and an angle in a right triangle

- **Word problems** involving two right triangles that share a side

- **Word problems** involving angle of elevation and angle of depression

<u>7.3: Unit circle</u>

- Know the radians, degrees and points (x, y) around the unit circle

- Evaluate trig functions for all special angles around the unit circle: all multiples of $\dfrac{\pi}{4}$, $\dfrac{\pi}{3}$, $\dfrac{\pi}{6}$, including quadrant angles 0, $\dfrac{\pi}{2}$, π, $\dfrac{3\pi}{2}$

- Evaluate trig functions for angles coterminal with any special angle

- Define the six trig functions in terms of x and y (and r for circles that aren't the unit circle)

- Evaluate trig functions using your calculator

- Reference angles

<u>7.4: Other trig functions</u>

- Evaluate all trig functions given one trig function value and a quadrant

- Evaluate trig functions given a point on the terminal side of the angle

- Even and odd functions

- Pythagorean identities

- Quotient and reciprocal identities

<u>Suggested practice problems:</u>

- Quizzes 1 and 2

- Ch. 7 Review p. 637-638 #1-21, 24-36, 39-46, 49, 50

- Ch. 7 Practice Test (from book) p. 639 #1-9, 11-14, 17-21, 23