# H. Algebra II Review KEY

## Part 8 - Trigonometric Functions

8a]

| ∅ | deg. | rad. | x | y |
|---|---|---|---|---|
| 1 | 0 | 0 | 1 | 0 |
| 2 | 30° | $\pi/6$ | $\sqrt{3}/2$ | $1/2$ |
| 3 | 45° | $\pi/4$ | $\sqrt{2}/2$ | $\sqrt{2}/2$ |
| 4 | 60° | $\pi/3$ | $1/2$ | $\sqrt{3}/2$ |
| 5 | 90° | $\pi/2$ | 0 | 1 |
| 6 | 120° | $2\pi/3$ | $-1/2$ | $\sqrt{3}/2$ |
| 7 | 135° | $3\pi/4$ | $-\sqrt{2}/2$ | $\sqrt{2}/2$ |
| 8 | 150° | $5\pi/6$ | $-\sqrt{3}/2$ | $1/2$ |

| ∅ | deg. | rad. | x | y |
|---|---|---|---|---|
| 9 | 180° | $\pi$ | -1 | 0 |
| 10 | 210° | $7\pi/6$ | $-\sqrt{3}/2$ | $-1/2$ |
| 11 | 225° | $5\pi/4$ | $-\sqrt{2}/2$ | $-\sqrt{2}/2$ |
| 12 | 240° | $4\pi/3$ | $-1/2$ | $-\sqrt{3}/2$ |
| 13 | 270° | $3\pi/2$ | 0 | -1 |
| 14 | 300° | $5\pi/3$ | $1/2$ | $-\sqrt{3}/2$ |
| 15 | 315° | $7\pi/4$ | $\sqrt{2}/2$ | $-\sqrt{2}/2$ |
| 16 | 330° | $11\pi/6$ | $\sqrt{3}/2$ | $-1/2$ |

$\sin \emptyset = y$ $\quad \cos \emptyset = x$ $\quad \tan \emptyset = y/x$

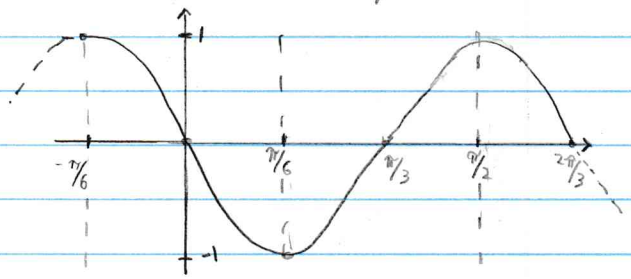
$\sec \emptyset = \frac{1}{x}$ $\quad \csc \emptyset = \frac{1}{y}$ $\quad \cot \emptyset = x/y$

8b1] Period: $2\pi/3$

Interval: $\pi/6$

Max.: 1, Min.: -1

Center: $y = 0$

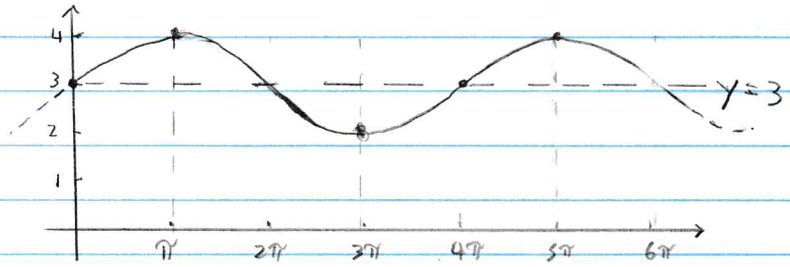



8b2] Period: $4\pi$

Interval: $\pi$

Max: 4, Min.: 2

Center: $y = 3$

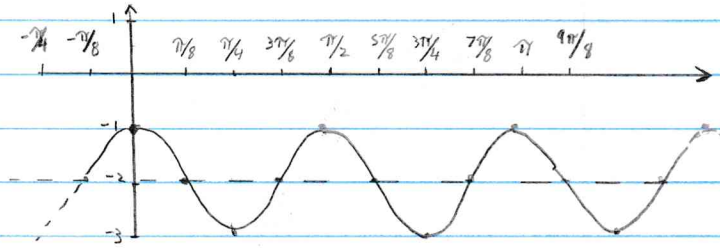



8b3] Period: $\pi/2$

Interval: $\pi/8$

Max: -1, Min: -3

Center: $y = -2$



# H. Algebra II Review KEY

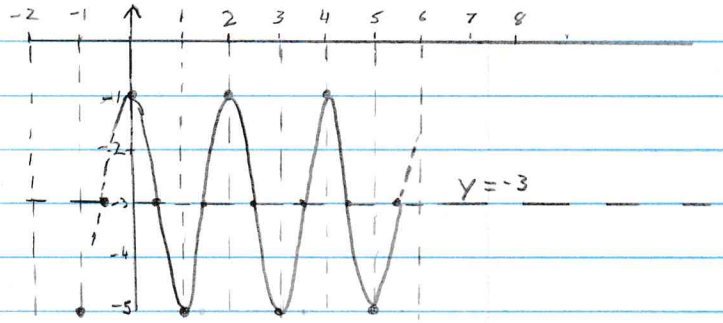
## Part 8 - Trigonometric Functions

8b4] Period: 2

Interval: 1/2

Max.: -1, Min.: -5

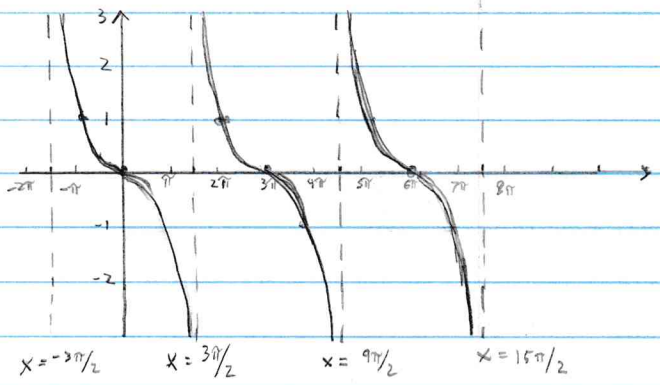
Center: $y = -3$




8c1] Period: $3\pi$

Asymptotes:

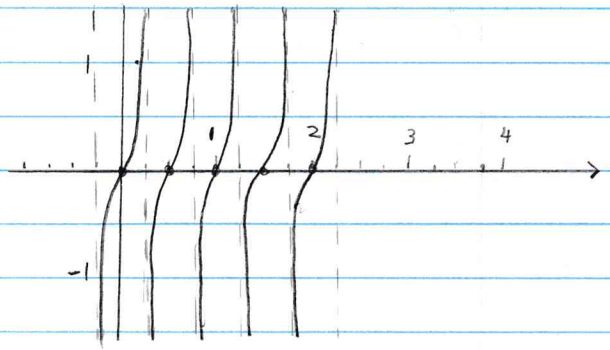
$x = -3\pi/2, \ 3\pi/2, \ 9\pi/2, \ 15\pi/2$




8c2] Period: $\frac{1}{2}$

Asymptotes:

$x = -1/4, \ 1/4, \ 3/4, \ 5/4 \ldots$




8d1] $x = \pi/9, \ 5\pi/9, \ 7\pi/9, \ 11\pi/9, \ 13\pi/9, \ 17\pi/9$

8d3] $x = \pi/3, \ 2\pi/3, \ 4\pi/3, \ 5\pi/3$

9d2] $x = \pi/6, \ 5\pi/6, \ \sin^{-1}(2/3), \ \pi - \sin^{-1}(2/3)$

9d4] $x = \pi/6, \ 5\pi/6, \ \pi/2, \ 3\pi/2$