King Fahd University of Petroleum and Minerals
Prep -Year Math Program
Math 002 - Term 062
Recitation Hour Problems (5.5 - 5.7)

Question1: Draw the graph of the six trigonometric functions over one complete period.

Question2: For the function $y = -\frac{3}{2}\cos(2x)$, find the amplitude, period and draw the graph over one complete period.

Question3: Consider the function $y = \frac{3}{2}\csc\left(x - \frac{\pi}{2}\right) + 2$:

i) Find the period, the phase shift, the vertical translation, and the range.

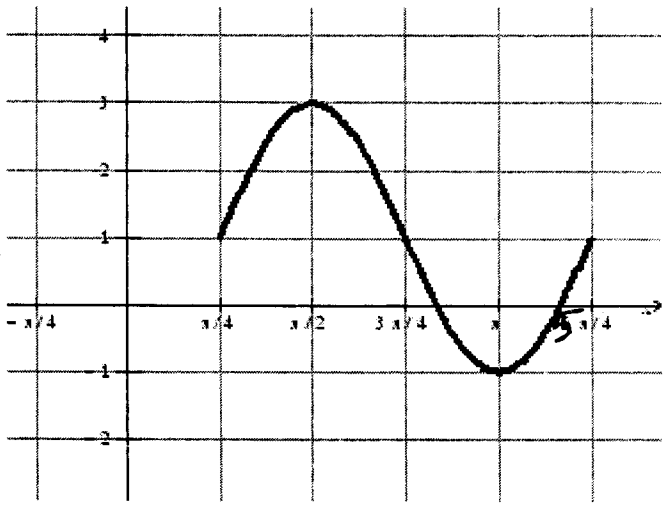
ii) Graph the function over the interval $\left(\frac{\pi}{2}, \frac{5\pi}{2}\right)$.

Question4: Consider the function $f(x) = -2\tan(2x - \frac{\pi}{4})$, find the following :

(i) the period of $f(x)$, (ii) the equation of all vertical asymptotes over the interval $[-\pi, \pi]$, and (iii) and the $x-$intercepts over the interval $[-\pi, \pi]$.

Question5: If the function $y = a\sin(bx + c)$ has amplitude = 3, period = 8π, and phase-shift = 1, find the possible values of *a, b, c.*

Question6: The graph given below represents the graph of a sine function of the form $y = a\sin(bx + c) + d$. Find the values of $a, b, c,$ and d.



• Recitation 5.5 - 5.7

Q1. check your notes.

Q2. check your notes

Q3. check your notes

Q4. check your notes

Q5. $a = 3$

$P = \frac{2\pi}{b} = 8\pi \Rightarrow b = \frac{2\pi}{8\pi} = \frac{1}{4}$.

$P.S. = \frac{-c}{b} = -4c = 1 \Rightarrow c = \frac{-1}{4}$.

$\therefore y = 3\sin\left(\frac{1}{4}x - \frac{1}{4}\right)$.

Q6. check your notes