# M1060-2 QUIZ 4 (Spencer Stirling) - September 23, 2010

Directions: You may attach more sheets if necessary. SHOW ALL WORK and CLEARLY mark your solutions.

1) (5 points) Consider the function $d \quad a \quad b \quad c$

$$f(x) = -3 - \frac{2}{3}\cos\left(\frac{\pi x}{6} + 4\right) \tag{1}$$

(a) What is the amplitude?

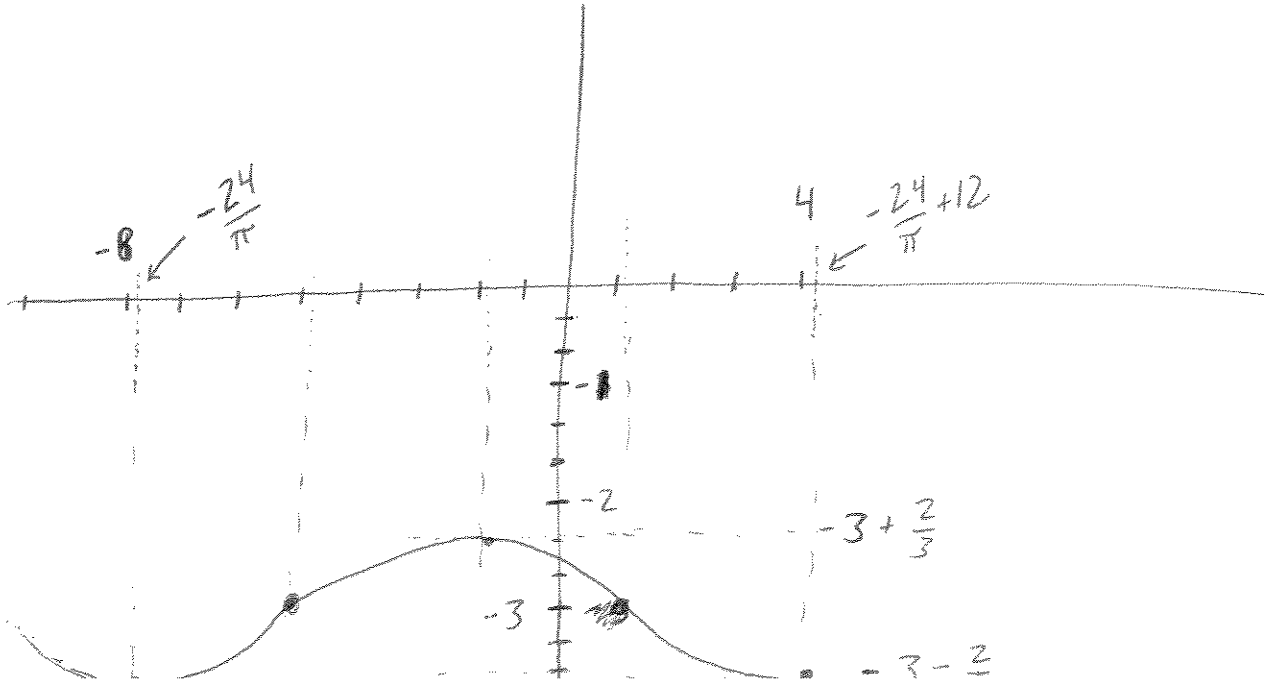
$\left|-\frac{2}{3}\right| = \boxed{\frac{2}{3}}$

(b) What is the period? $\frac{2\pi}{b} = \frac{2\pi}{\pi/6} = 2\pi \cdot \frac{6}{\pi} = \boxed{12}$

(c) What is the horizontal shift?

$c/b = -4/\pi/6 = -4 \cdot \frac{6}{\pi} = \boxed{-\frac{24}{\pi} \text{ or } \frac{24}{\pi} \text{ to left}}$

(d) Sketch the graph, clearly marking some points of reference:



2) (5 points) Consider the function a b d

$$f(x) = 3\cot\left(\frac{\pi x}{2}\right) + 1 \qquad (2)$$

(a) What is the period?

$\frac{\pi}{b} = \frac{\pi}{\pi/2} = \boxed{2}$

(b) What is the vertical stretch/shrink factor?

$\boxed{3}$ stretch

(c) What is the horizontal shift?

0 (none)

(d) Sketch the graph, clearly marking some points of reference:

normal $\cot(x)$