

Week 6 Homework.

Question 1

Phase shift.

Question 2.

Period: $\frac{\pi}{3}$

Amplitude: $= \frac{\pi}{3} \cdot 4$

Question 3:

Period: $\frac{1}{7}$

Amplitude: $\frac{2}{5}$ or 0.4

Question 4.

~~The graph of g is identical to the graph of f .~~

The graph of g is a horizontal shift of the graph of f 3π units to the right.

Question 5.

The graph of g is a vertical shift on the graph of f upwards by 5 units.

Question 6

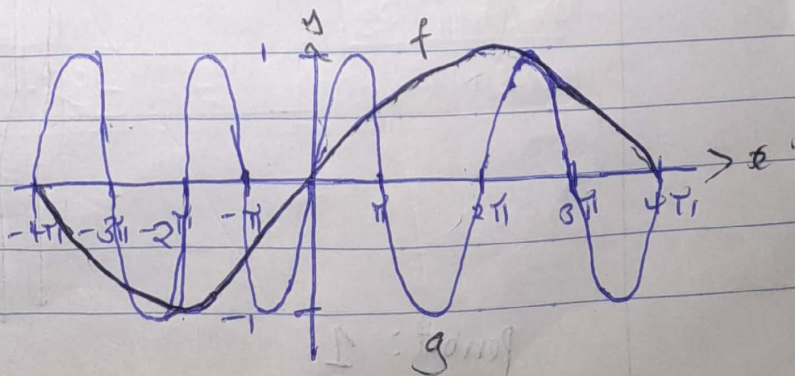
The graphs of f and g differ only in their phase shift.

Question 7

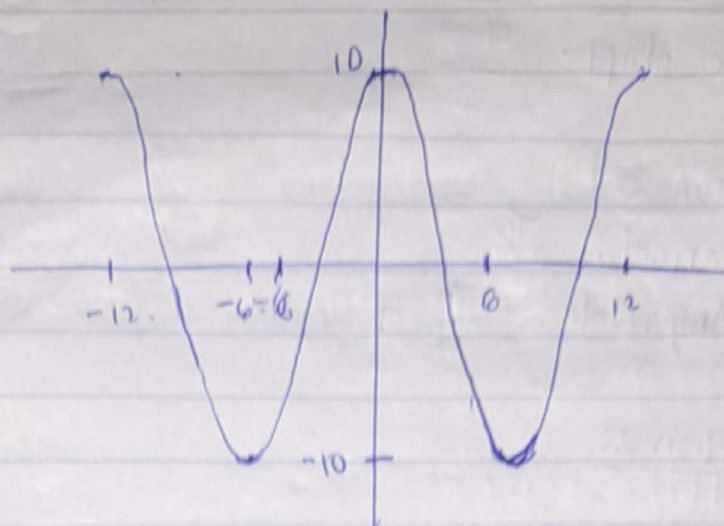
The period of g is one-half the period of f .

Question 8.

Ans: Graph 2 2nd graph.



Question 9.
Ans: 3rd Graph.



Question 10.

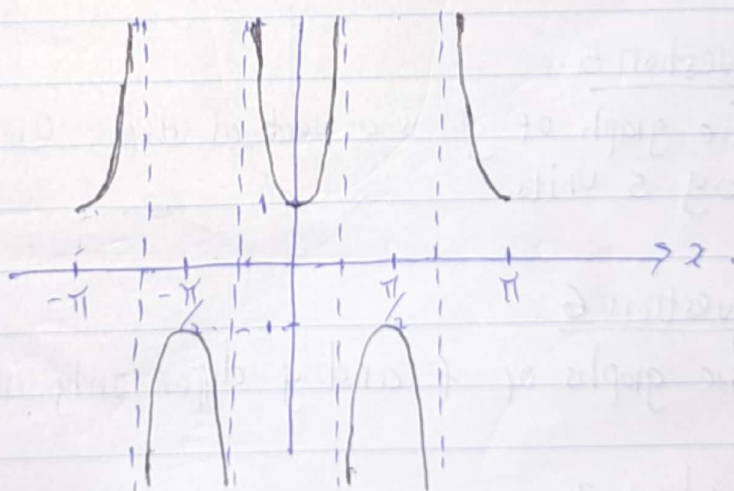
$x \neq n\pi$, where n is an integer.

Question 11.

The period of $y = \csc x$ is 2π

Question 12.

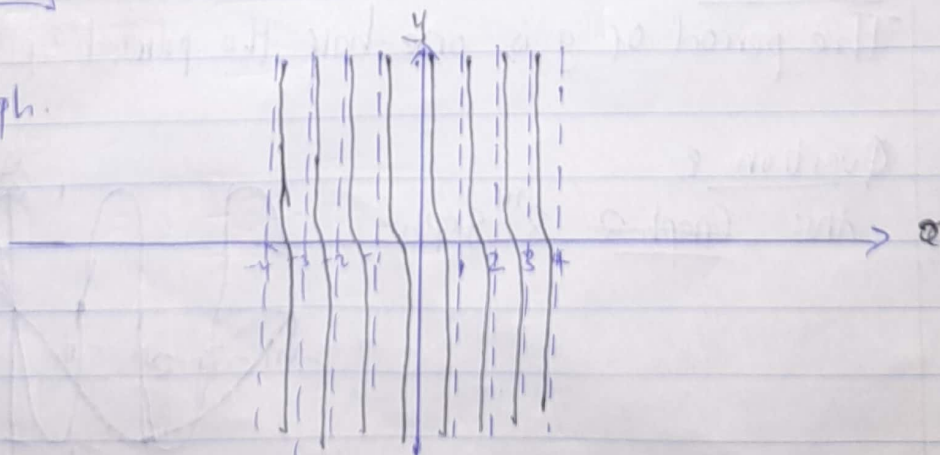
Ans: 3rd Graph.



period: 2π

Question 13.

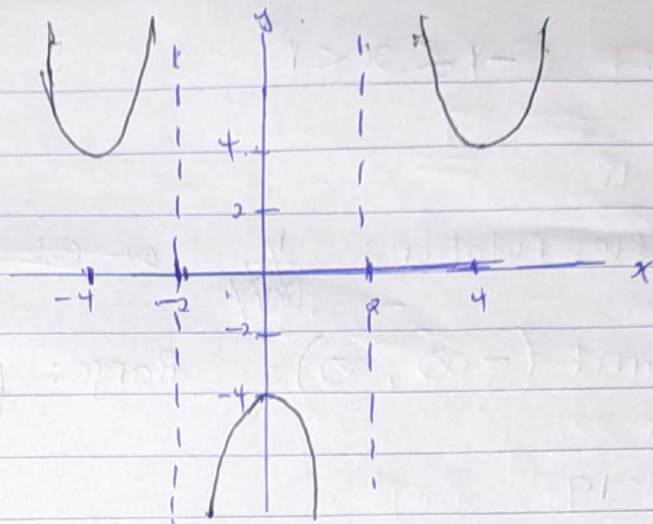
Ans: 4th Graph.



period: 1

Question 14

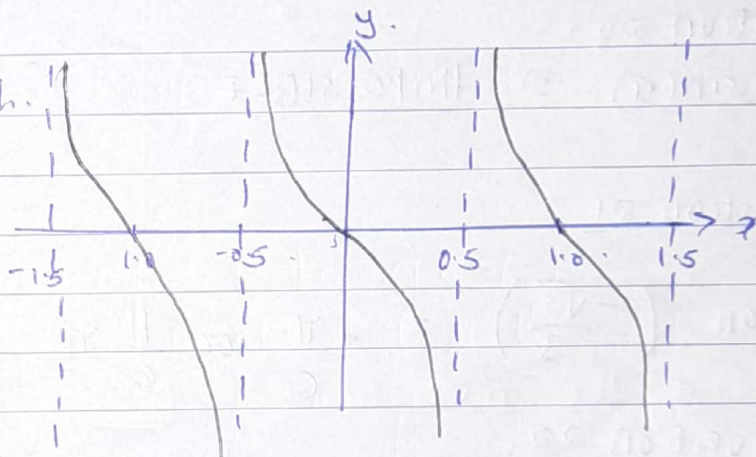
Ans: 1st graph.



period: 8

Question 15.

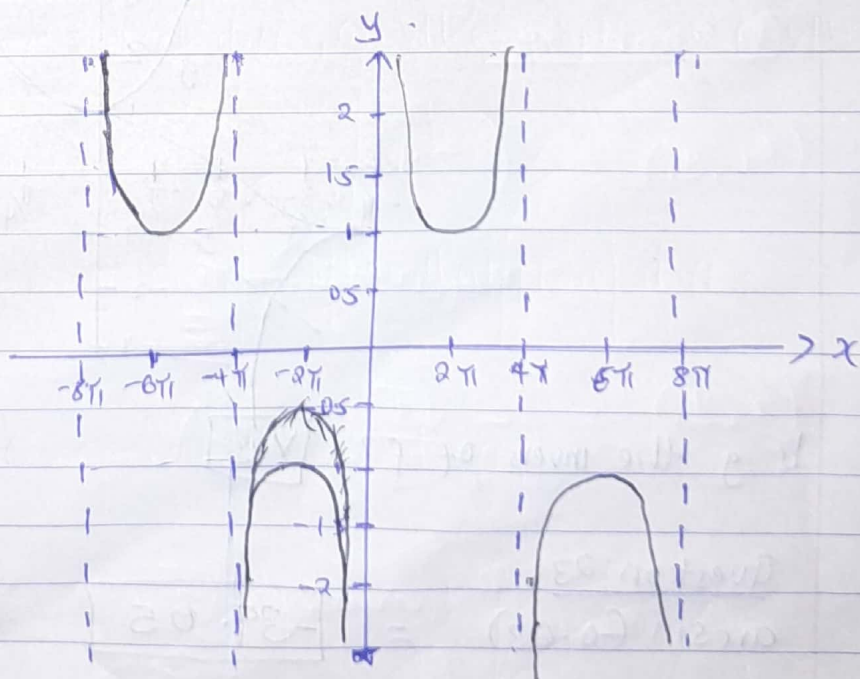
Ans: 3rd Graph.



Period

Question 16.

Ans: 2nd Graph.



Question 17.

Alternative notation: $y = \frac{1}{\sin x}$ or $y = \csc x$. $\sin^{-1}(x)$

Domain: $[-1, 1]$

Question 18:

Alternative notation: $\tan^{-1}(x)$

Domain: $(-\pi/2, \pi/2)$

Question 19:

$$\arccos\left(\frac{1}{2}\right) = \frac{\pi}{3} \text{ or } 60^\circ$$

Question 20:

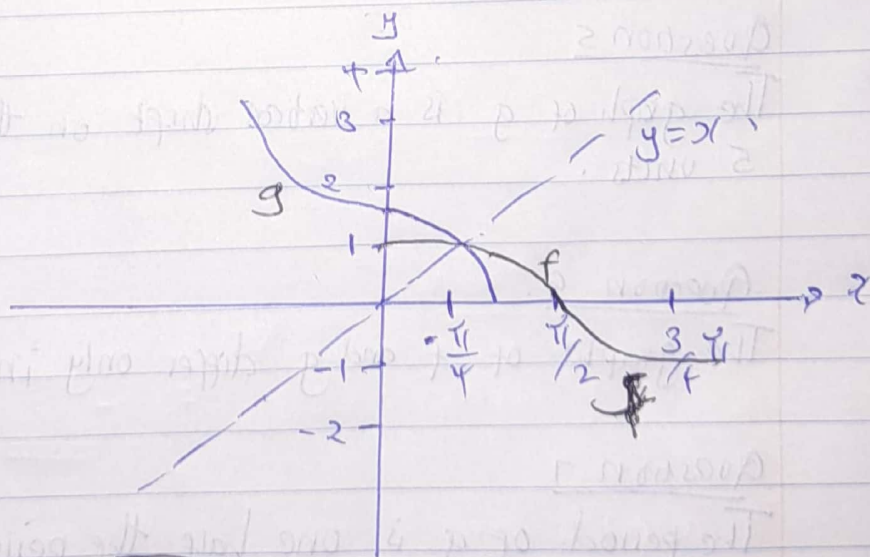
$\arcsin(9) \Rightarrow$ IMPOSSIBLE

Question 21:

$$\tan^{-1}\left(-\frac{\sqrt{3}}{3}\right) = -\frac{\pi}{6} \text{ or } \frac{11}{6}\pi$$

Question 22:

Ans: 3rd Graph.
2nd Graph.



Is g the Inverse of f? **NO**

Question 23:

$$\arcsin(-0.63) \approx \boxed{-39.05}$$

Question 24

$$(x_1, y_1) = \left(-\sqrt{3}, -\frac{\pi}{3}\right)$$

Required: $\boxed{-\frac{\pi}{3}}$

$$(x_2, y_2) = \left(-\frac{\sqrt{3}}{3}, -\frac{\pi}{6}\right)$$

Required: $\boxed{-\frac{\sqrt{3}}{3}}$

$$(x_3, y_3) = \left(1, \frac{\pi}{4}\right)$$

Required: $\boxed{1}$

Question 25

$$\theta = \cos^{-1}\left(\frac{5}{x}\right)$$

Question 26

$$\theta = \tan^{-1}\left(\frac{x+1}{14}\right)$$

Question 27

IMPOSSIBLE

Question 28

$$-0.1$$