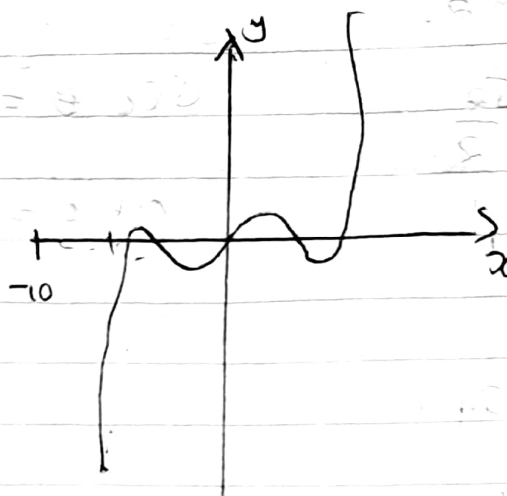


Final Exam Math 2550 (TEST)

Question ONE

4th graph.



Question 2.

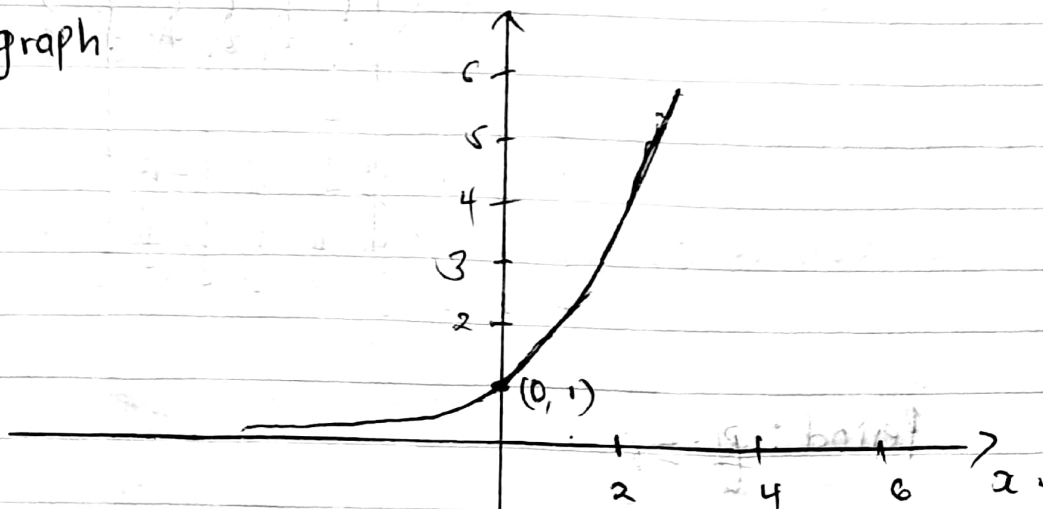
$$\sin(345^\circ) = \frac{-\sqrt{6} + \sqrt{2}}{4}$$

$$\cos(345^\circ) = \frac{\sqrt{2} + \sqrt{6}}{4}$$

$$\tan(345^\circ) = -2 + \sqrt{3}$$

Question 3

4th graph.



Question 4

$$\sin \theta = \frac{2\sqrt{15}}{15}$$

$$\csc \theta = \frac{\sqrt{15}}{2}$$

$$\cos \theta = \frac{3\sqrt{15}}{15}$$

$$\sec \theta = \frac{\sqrt{15}}{3}$$

$$\tan \theta = \frac{2}{3}$$

$$\cot \theta = \frac{3}{2}$$

Question 5

The graph of g is a vertical shift 4 units upward from the graph of f .

Question 6

$$\sin(24) = -\frac{120}{169}$$

$$\cos(24) = \frac{119}{169}$$

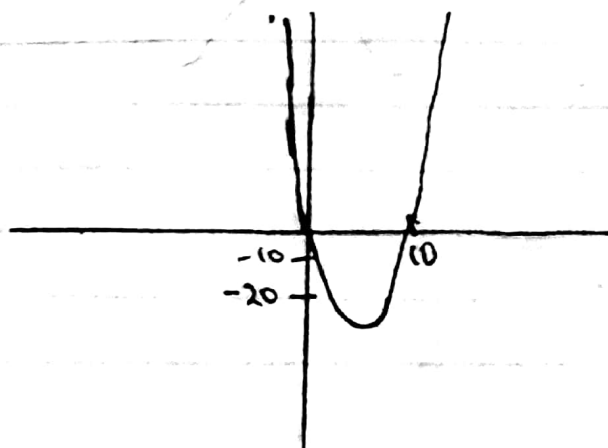
$$\tan(24) = -\frac{120}{119}$$

Question 7

$$x = -2$$

Question 8

1st Graph.



Question 9

Vertex: $(5, -25)$

axis of symmetry: $x = 5$

x-intercept: $(0, 0)$ (smaller x-value)

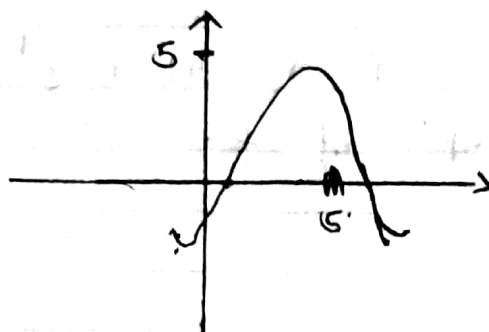
$(10, 0)$ (larger x-value)

Question 9

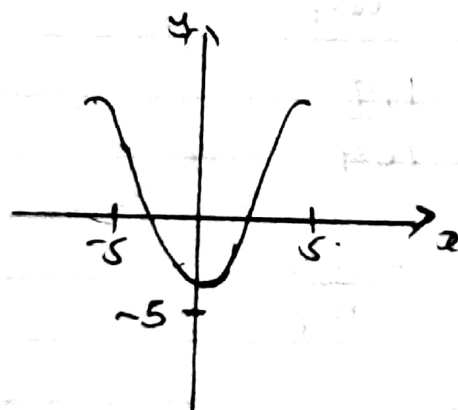
$\sin^2(x)$

Question 10

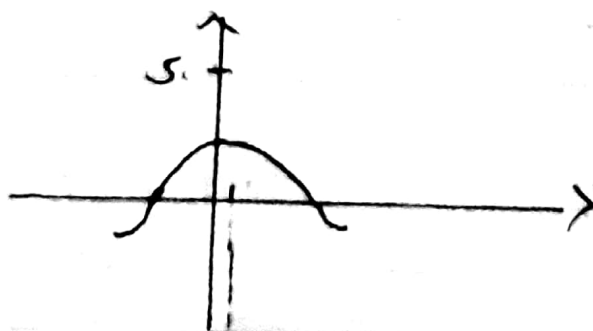
(a) 4th graph.



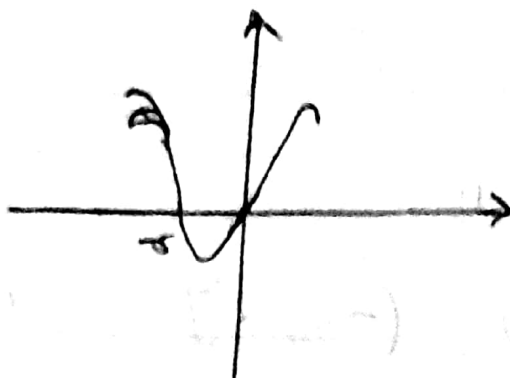
(b) 2nd graph.



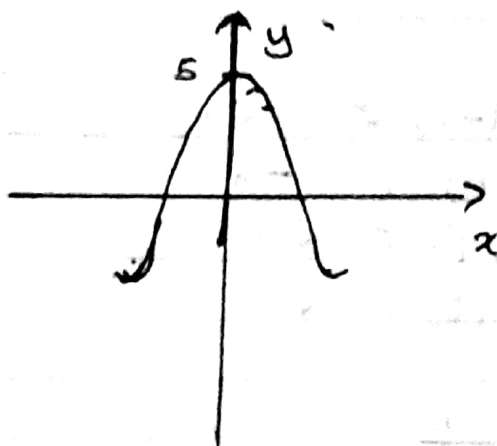
(c) 2nd graph.



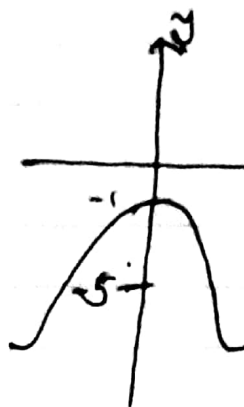
(d) 4th graph.



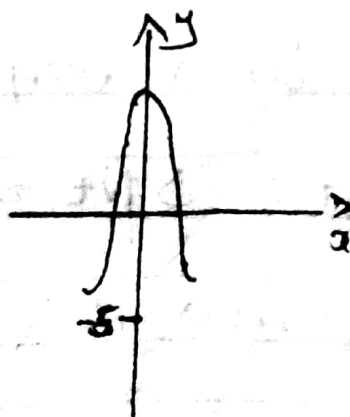
(e) 3rd graph.



(f) 2nd graph.



(g) 4th graph



Question 11

$$\frac{1}{3}$$

Question 12.

$$\text{Domain: } [-2, 2]$$

note the braces/brackets.

$$\text{Range: } [-3, 6]$$

$$(a) f(-1) = -3.$$

$$(b) f(0) = -2$$

$$(c) f(1) = 3.$$

$$(d) f(2) = 6.$$

Question 13.

$$4x + 3.$$

Question 14

$$(-2, 1)$$

Question 15.

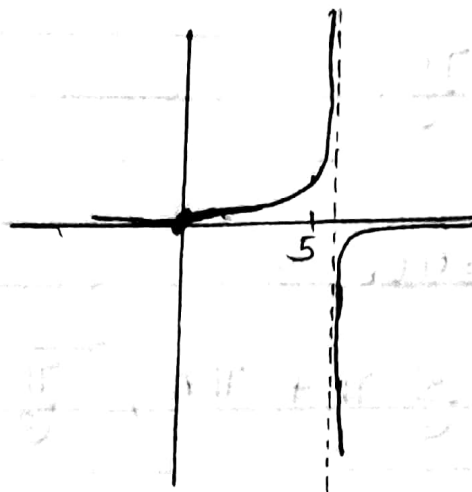
(a) all real numbers x except $x = 6$.

(b) x -intercept: $\nexists$ N.E

(c) ~~$(0, \frac{1}{6})$~~ y -intercept: $(0, \frac{1}{6})$

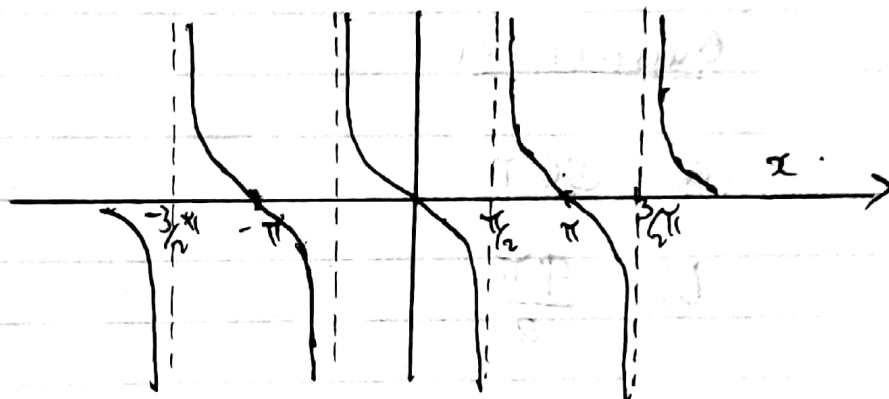
- (c) vertical asymptote: $x = 6$,
Horizontal asymptote: $y = 0$.

(d) 3rd graph.



Question 16

1st graph.



Question 17

a) $\frac{1}{x^2-1} + \frac{1}{x}$.

(b) $\frac{1}{x} - \frac{1}{x^2-1}$

(c) $\frac{1}{x^3-x}$.

(d) $7x - \frac{1}{x}$.

Domain: ~~$(-\infty, -1) \cup (-1, 0) \cup (0, 1) \cup (1, \infty)$~~
 $(-\infty, -1) \cup (1, \infty)$

Question 18

$$\frac{7}{2} \sin(2x)$$

Question 19

$$\frac{\pi}{3}$$

Question 20

$$\frac{2}{3} \pi + \pi n, \quad \frac{\pi}{3} + \pi n.$$

Question 21

(a) 36π

b) $\frac{9\pi}{2}$

(c) $\frac{32}{3} \pi r^3$

Question 22

$$b = 9.90$$

$$A = 61.53$$

$$C = 43.14$$

Question 23

Step 1: $-1 + \sqrt{7}i$

Step 2: ~~5-8~~ 8

Question 24

$$B = 79.49$$

$$C = 40.51$$

$$b = 9.08$$

Question 25.

$$\sin(\theta) = \frac{7}{25}$$

$$\csc(\theta) = \frac{25}{7}$$

$$\cos(\theta) = \frac{24}{25}$$

$$\sec(\theta) = \frac{25}{24}$$

$$\tan(\theta) = \frac{7}{24}$$

$$\cot(\theta) = \frac{24}{7}$$

Question 26.

$$\log_7(2) - \log_7(3)$$

Question 27

$$-12 - 51i$$

Question 28

$$x = -2, -1, 1$$

Question 29.

$$\sin \theta = \frac{40}{41}$$

$$\tan \theta = \frac{40}{9}$$

$$\sec \theta = \frac{41}{9}$$

$$\cos \theta = \frac{9}{41}$$

$$\csc \theta = \frac{41}{40}$$

$$\cot \theta = \frac{9}{40}$$

Question 30.

3rd graph.

