

**Instructions:** Each question is worth 3 points but the last question. Question 3 is worth 1 point. **Show all your work in order to receive credit.**

**Problem 1.** Simplify the fractions

$$\begin{aligned}
 (a) \frac{7}{6} - 7 - \frac{2}{3} &= \frac{7}{6} - \frac{7}{1} - \frac{2}{3} \\
 &\approx \frac{7}{6} - \frac{7}{1} \cdot \frac{6}{6} - \frac{2}{3} \\
 &= \frac{7}{6} - \frac{42}{6} - \frac{2}{3} \\
 &= \frac{7-42}{6} - \frac{2}{3} \\
 &= -\frac{35}{6} - \frac{2}{3} \cdot \frac{2}{2} \\
 &= -\frac{35}{6} - \frac{4}{6} \\
 &= -\frac{35+4}{6} = -\frac{39}{6}
 \end{aligned}$$

(b) Solve for  $x$  using the definition of inequality

$$3 \left| \frac{2}{5}x + 4 \right| - 7 = 14$$

$$\frac{3 \left| \frac{2}{5}x + 4 \right|}{3} = \frac{21}{3}$$

$$\left| \frac{2}{5}x + 4 \right| = 7$$

abs value so 2 case "negative and positive"

$$\textcircled{1} \quad \frac{2}{5}x + 4 = 7$$

$$5 \cdot \frac{2}{5}x = 3 \cdot 5$$

$$\frac{2x}{2} = \frac{15}{2}$$

$$x = \frac{15}{2}$$

$$\textcircled{2} \quad -\left(\frac{2}{5}x + 4\right) = 7$$

$$\frac{2}{5}x + 4 = -7$$

$$5 \cdot \frac{2}{5}x = -11 \cdot 5$$

$$\frac{2x}{2} = -55$$

$$x = -\frac{55}{2}$$

**Problem 2.** Solve for the variable  $x$ .

$$6 - 9x + x = 7x + 2(3 - x)$$
$$\begin{array}{rcl} \cancel{6} - \cancel{9x} + x & = & 7x + \cancel{6} - \cancel{2x} \\ & & +8x \quad +8x \end{array}$$
$$0 = 5x + 6$$
$$\begin{array}{rcl} 0 & = & 13x \\ -6 & & -6 \end{array}$$
$$\begin{array}{rcl} 0 & = & 13x \\ \cancel{13} & & \cancel{13} \end{array}$$
$$0 = x$$

**Problem 3.** If you were able to travel back in time to any historical event and witness it without affecting anything, what would it be and why?

When Area 51 was built

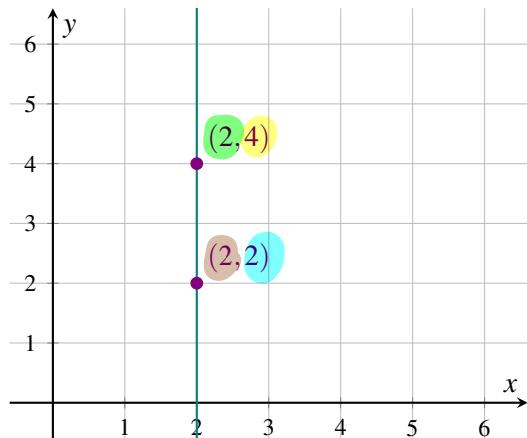
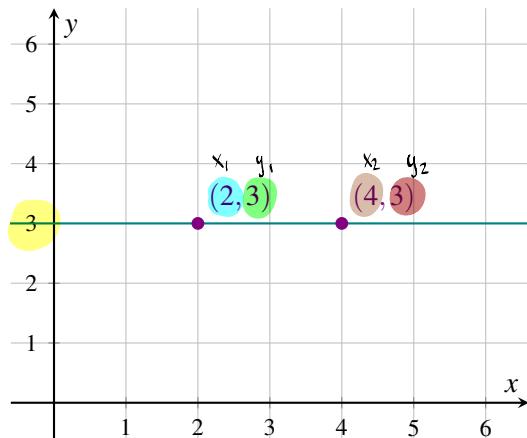
or

formation of moon

or

If future when our galaxy collides with  
andromeda galaxy

**Problem 4.** Give the slope and give the equation of the line.



$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - 3}{4 - 2} = \frac{0}{2} = 0$$

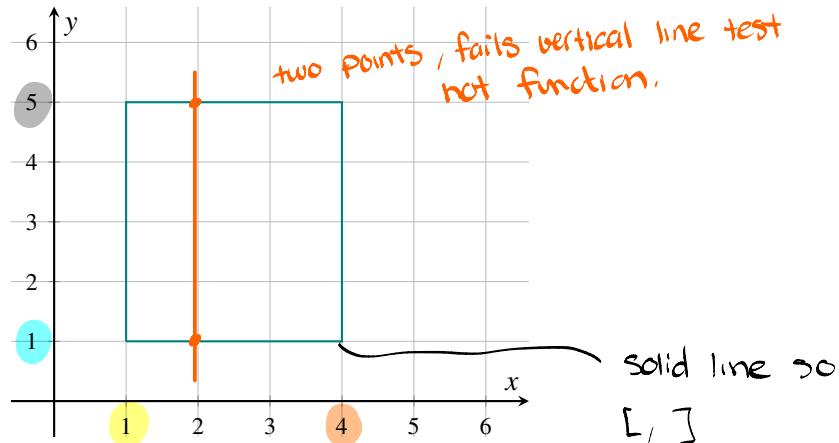
$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 2}{2 - 2} = \frac{2}{0}$$

slope =  $m = 0$ .

equation  $y = mx + b$  ↓ start at 3  
 $y = 0x + 3$   
 $y = 3$

undefined.

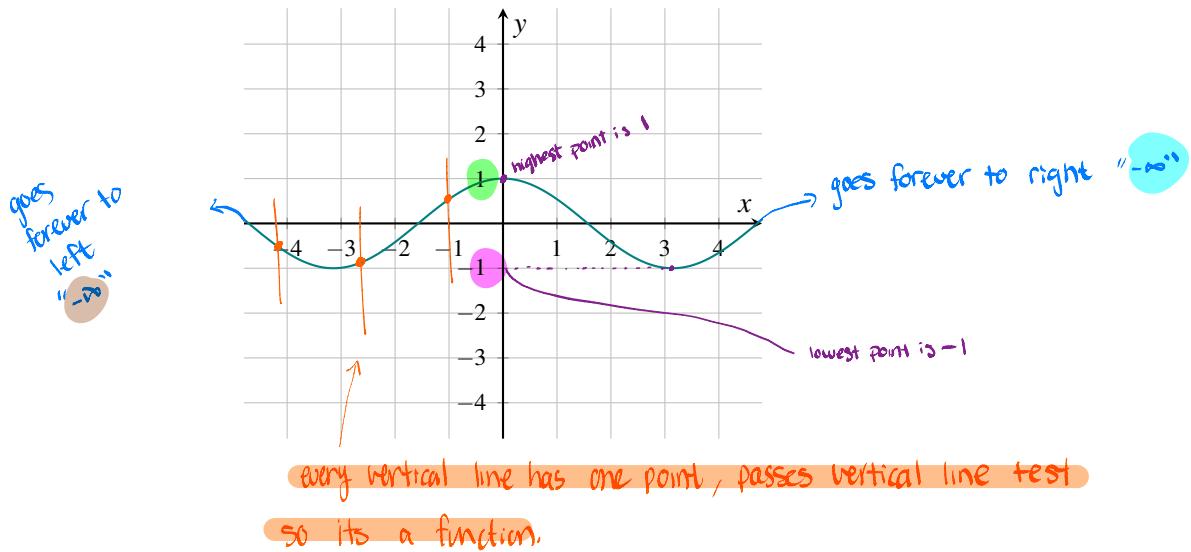
**Problem 5.** Determine if the follow is a function. Give the domain and range of each graph.



Domain : left to right  $[1, 5]$

Range : up to down  $[1, 5]$

**Problem 6.** Determine if the follow is a function. Give the domain and range of each graph.

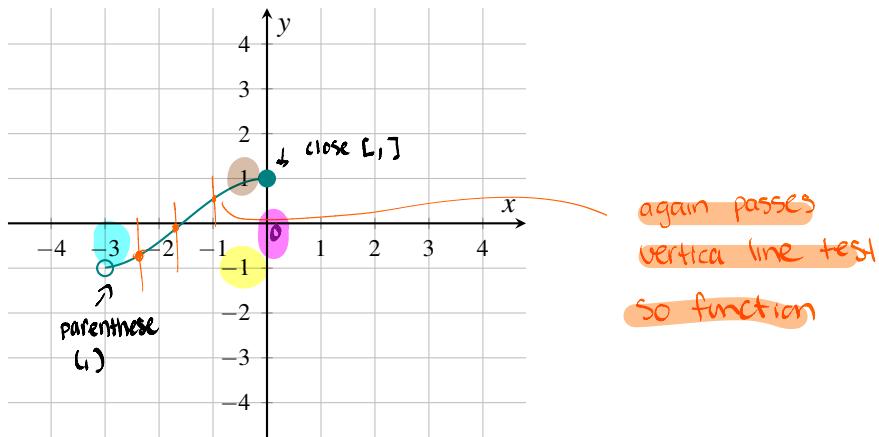


This is a function

Domain: left to right  $(-\infty, \infty)$  + always has  $(, )$

Range : up to down  $[-1, 1]$  + line is solid so we have brackets.

**Problem 7.** Determine if the follow is a function. Give the domain and range of each graph.



This is a function

Domain : left to right :  $[-3, 0]$

Range : up to down :  $[-1, 1]$