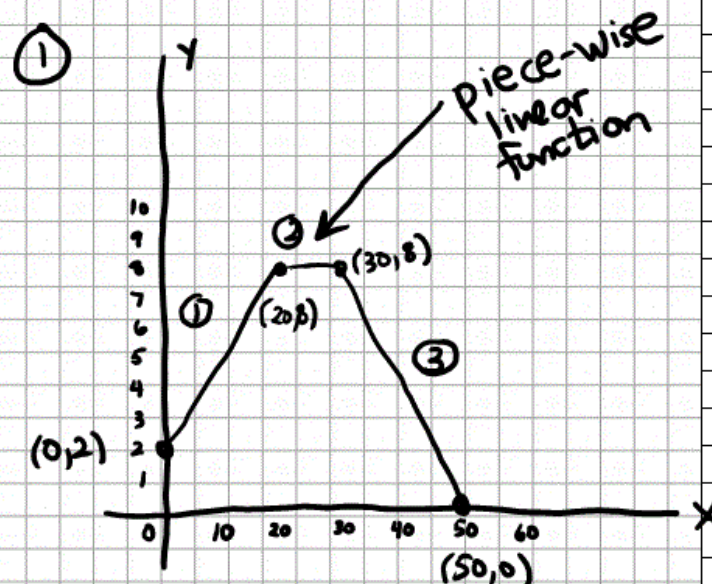


Name: _____ Page Number: 1
 Class: Math 1301 Date: 3-7-13
 Topic/Section: _____

Piece-wise Functions/

Parallel and perpendicular lines

Examples and Vocabulary



y = thousands of gallons of water in a reservoir

x = elapsed hours

a. Is $y = f(x)$? Yes

b. Find the x - and y -intercepts and interpret.

Notes/Comments/Questions

① $y = mx + b = \frac{3}{10}x + 2$
 $m = \frac{8-2}{20-0} = \frac{6}{20} = \frac{3}{10}$

② $y = 8$

③ $y = m(x - x_1) + y_1$
 $m = \frac{0-8}{50-30} = \frac{-8}{20}$
 $= -\frac{2}{5}$

$y = -\frac{2}{5}(x - 50)$

$$y = f(x) = \begin{cases} \frac{3}{10}x + 2, & \text{if } 0 \leq x \leq 20 \\ 8, & \text{if } 20 \leq x \leq 30 \\ -\frac{2}{5}(x - 50), & 30 \leq x \leq 50 \end{cases}$$

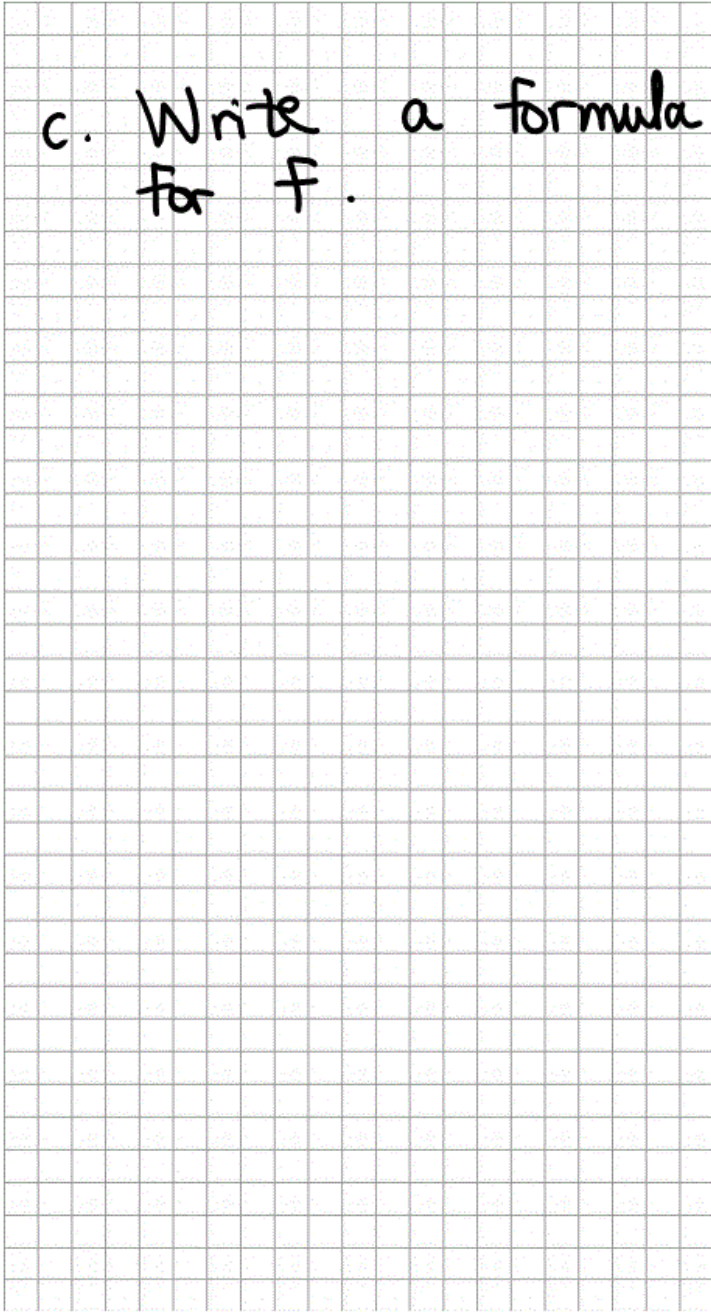
y -int. = 2

Initially there is 2 thousands gallons in the reservoir.

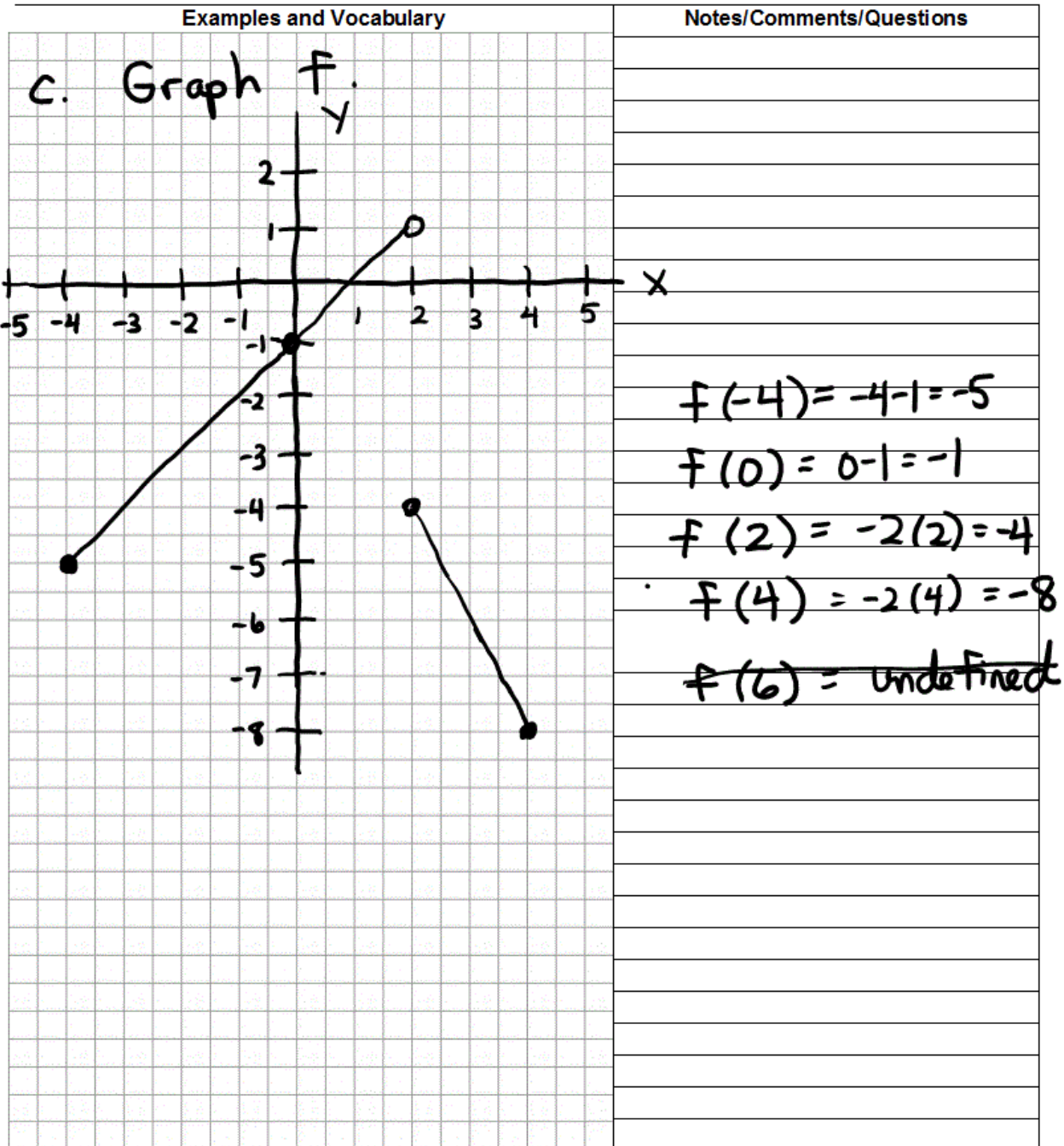
x -int. = 50

The reservoir is empty after 50 hrs.

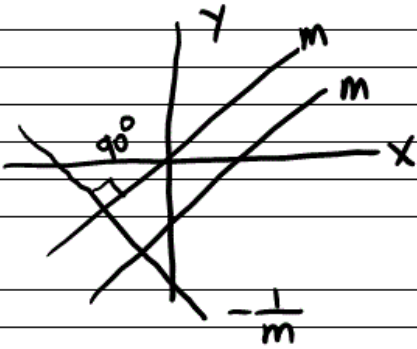
Name: _____ Page Number: 2
 Class: Math 1301 Date: 3-7-13
 Topic/Section: _____

Examples and Vocabulary	Notes/Comments/Questions
 c. Write a formula for f.	

Name: _____ Page Number: 4
 Class: Math 1301 Date: 3-7-13
 Topic/Section: _____



Name: _____ Page Number: 5
 Class: Math 1301 Date: 3-7-13
 Topic/Section: _____

Examples and Vocabulary	Notes/Comments/Questions
<u>Parallel lines</u> are lines that do not intersect. Parallel lines have the same slope. <u>Perpendicular lines</u> are lines that intersect at a 90° (right) angle. Perpendicular lines have slopes that are negative reciprocals. a. Find the formula for the line that is parallel to the line $y = 2x + 5$ and passes through $(-2, 5)$.	

Name: _____ Page Number: 6
 Class: Math 1301 Date: 3-7-13
 Topic/Section: _____

Examples and Vocabulary	Notes/Comments/Questions
b. Find the formula for the line that is perpendicular to the line $y = 2x + 5$ and passes through $(-2, 5)$.	