

Math 105 Exam 2 October 17, 2006
Chapters 1.7 – 2.5

Name _____ Instructor name or section # _____

1	2	3	4	5	6	7	8	9	10	11	12	EC	total
16	5	7	18	5	9	5	14	6	4	6	5	3	100

Given: Odd (origin symmetry): $f(-x) = -f(x)$, Even (y-axis symmetry): $f(x) = f(-x)$

Ave Rate of Change = $\frac{f(x_2) - f(x_1)}{x_2 - x_1}$

Show All Work for Full Credit!!

1. (4 pts ea) Use interval notation to express the solution set for:

a. $-4x \geq 28$

b.) $|2x+1| < 5$

c.) $4 < x + 8 \leq 9$

d.) $-3|2-x| < -12$

2. (5 pts) Telephone plan DealsRUs charges \$25 per month and 3 cents per minute. Plan Pa Bell charges \$23 per month and 5 cents per minute. For what usage is DealsRUs a better deal?

3. (1 pt ea) Determine whether these relations are a function.

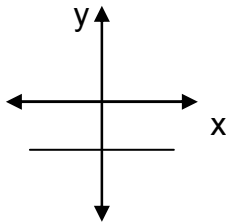
a. $\{(2, 4), (2, 8), (3, 12), (3, 16)\}$ Function? Yes No

Domain is { _____ }, Range is { _____ }

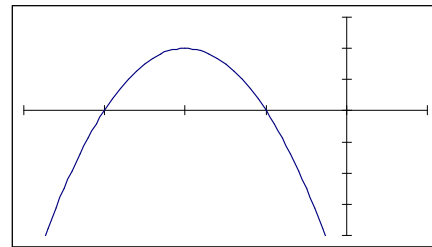
b. $y = \sqrt{x-28}$ Function? Yes No

c. $|x| + y = 13$ Function? Yes No

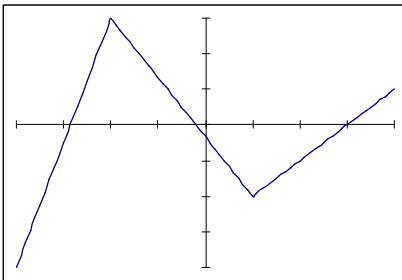
d. Function? Yes No



e.) Function? Yes No



4. (3 pts ea) Given the function below $y = f(x)$ (tic marks are one unit)

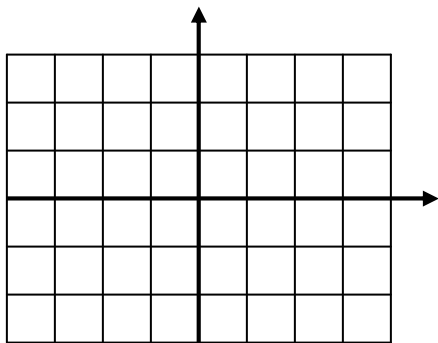


For what value of x is $f(x) = 3$ _____

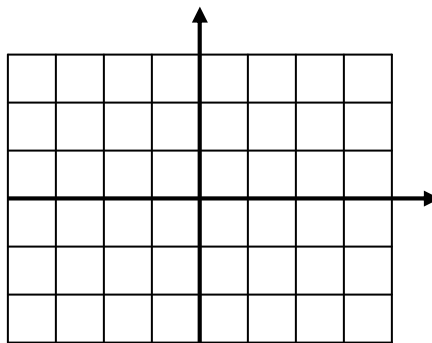
Is this function odd, even or neither? _____

(4 pts ea) Use the graph of $y = f(x)$ above to graph the following functions.

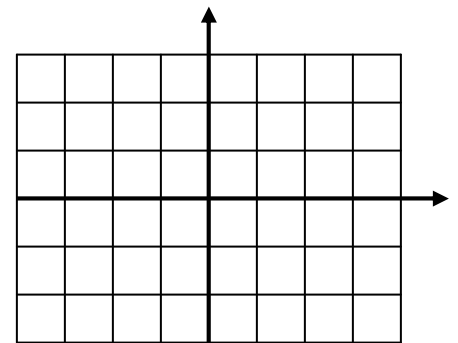
$g(x) = f(x - 3)$



$g(x) = -f(x)$



$g(x) = f(2x)$



5. (5 pts) Find and simplify the difference quotient $\frac{f(x+h) - f(x)}{h}$, $h \neq 0$ for $f(x) = 3x + 7$

10. (4 pts) Find y if it is on a line with slope = -2 passing through $(-3, y)$ and $(-2, 3)$.

11. (3 pts ea) Write the equation for the line passing through $(5, 6)$ and perpendicular to $5y - x + 2 = 0$

Point-slope form: _____

Slope-intercept form: _____

12. (5 pts) Find the average rate of change of $f(x) = \sqrt{x}$ from $x_1 = 9$ to $x_2 = 25$.

E.C.

For a particular function $f(x + y) = f(x) + f(y)$ and $f(1) = 3$. Now find $f(2)$, $f(3)$ and $f(4)$. Show work, no points for guesses.

[note: it is not generally true that $f(x + y) = f(x) + f(y)$]