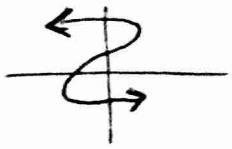
Algebra II
Review-Unit 1 (Functions)

Name: Key Block: _____

IDENTIFY FUNCTIONS

1. Give an example of a graph that is **a)** a function and **b)** one that is not a function.

function Example



Not a function example

2. Give an example of a table that is **a)** a function and **b)** one that is not a function.

Function

x	y
1	0
2	7
3	14

x	y
0	7
1	3
2	5
0	-2

Not a function

3. Give an example of coordinate points that is **a)** a function and **b)** one that is not a function.

Function
$\{(0,1),(3,5)(6,2)\}$

Not a function
$\{(1,3)(2,4)(1,5)\}$

4. "real-life" application

Class Schedule	Teacher
Math	Hosmer
Science	Cuthbert
History	Escobar
English	Mustakis
PE	Hosmer
Computer	Gordon
Art	Aoki

a) Is T(c) a function?
yes each class has one teacher

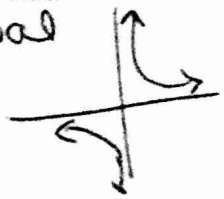
b) Is C(t) a function?
no Hosmer has math and PE

5. Sketch and name the different types of functions that were graphed in this unit.

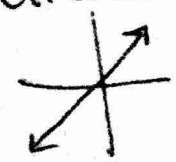
Absolute Value $y=|x|$

Quadratic $y=x^2$

Rational $y=\frac{1}{x}$

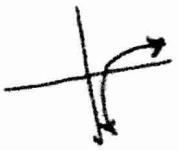


Linear $y=x$

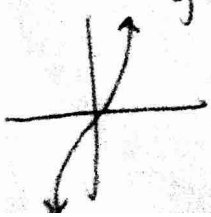


Exponential $y=a^x$

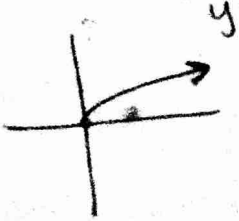
Logarithmic $y=\log x$



Cubic $y=x^3$



Square Root $y=\sqrt{x}$



Cube root $y=\sqrt[3]{x}$

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FUNCTION NOTATION & COMPOSITION OF FUNCTIONS

$f(x) = 3x^2 - 5$ $g(x) = -3x^2 + 8$

6. Given the functions above find each of the following.

e) $f(-2)$ f) $f(c-2)$ g) $g(-3m)$

$f(-2) = 3(-2)^2 - 5$
$= 12 - 5$
$= 7$

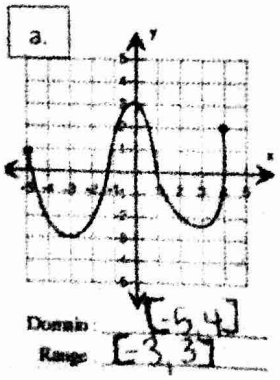
$f(c-2) = 3(c-2)^2 - 5$
$(c-2)^2 = (c-2)(c-2)$
$= c^2 - 2c - 2c + 4$
$= c^2 - 4c + 4$
$3(c^2 - 4c + 4) - 5$
$3c^2 - 12c + 12 - 5$
$= 3c^2 - 12c + 7$

$g(-3m) = -3(-3m)^2 + 8$
$= -3 \cdot 9m^2 + 8$
$= -27m^2 + 8$

DOMAIN & RANGE

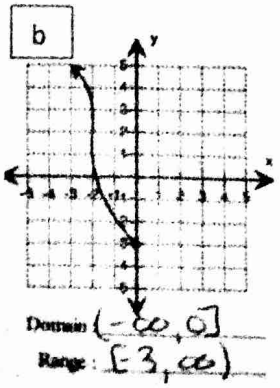
7. Identify the domain and range for each of the graphs below. (Write in interval notation)

a.



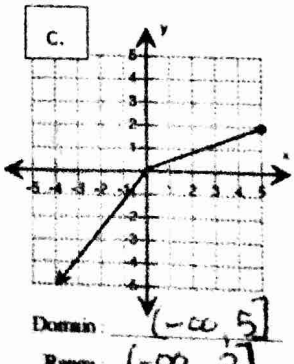
Domain $[-5, 4]$
Range $[-3, 3]$

b



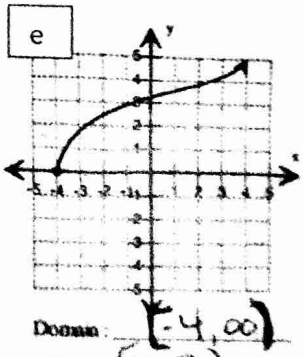
Domain $(-\infty, 0]$
Range $[-3, \infty)$

c.



Domain $(-\infty, 5]$
Range $(-\infty, 2]$

e



Domain $[-4, \infty)$
Range $[0, \infty)$

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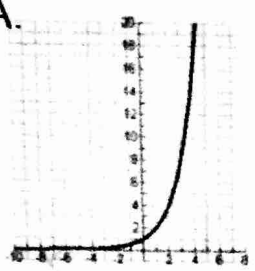
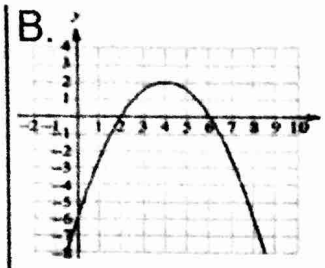
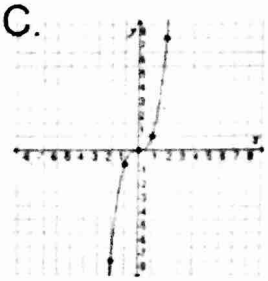
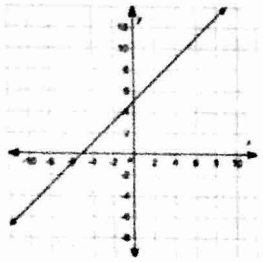
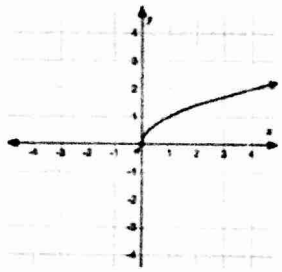
8. Listed below are the tables, graphs, equations, and names of ~~four~~ Six different functions. In the space below, write the table, equation, and parent function that goes with each graph.

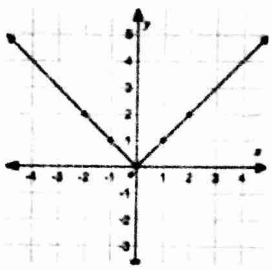
A. 

B. 

C. 

D. 

E. 

F. 

A, d, k, m

B, f, h, q

C, b, i, n

D, a, g, p

E, c, j, o

F, e, l, r

a. Linear	b. Cubic	c. Square Root
d. Exponential	e. Absolute Value	f. Quadratic

g. $f(x) = x$	h. $f(x) = x^2$	i. $f(x) = x^3$
j. $f(x) = \sqrt{x}$	k. $f(x) = 2^x$	l. $f(x) = \lvert x \rvert$

m.

x	-1	0	1	2
y	1/2	1	2	4

n.

x	-1	0	1	2
y	-1	0	1	8

o.

x	-1	0	1	2
y	undefined	0	1	$\sqrt{2}$

p.

x	-1	0	1	2
y	-1	0	1	2

q.

x	-1	0	1	2
y	1	0	1	4

r.

x	-1	0	1	2
y	1	0	1	2

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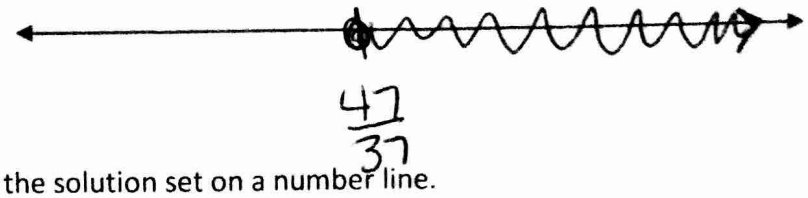
9. Solve $-5x \leq \frac{2x+47}{7}$. Graph the solution set on a number line.

$-35x \leq 2x+47$

$-37x \leq 47$

$x \geq \frac{47}{37}$

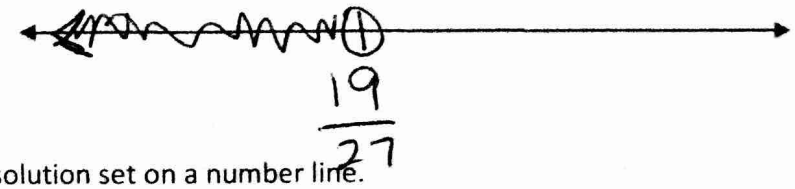


10. Solve $3(9a - 13) < -20$. Graph the solution set on a number line.

$27a - 39 < -20$

$27a < 19$

$a < \frac{19}{27}$



11. Solve $|6b - 5| \geq 13$. Graph the solution set on a number line.

$6b - 5 \geq 13$

$6b \geq 18$

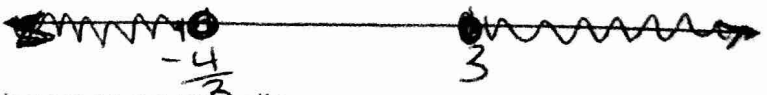
$b \geq 3$

$6b - 5 \leq -13$

$6b \leq -8$

$b \leq \frac{-8}{6}$

$b \leq \frac{-4}{3}$



12. Solve $|p + 4| < 8$. Graph the solution set on a number line.

$p+4 < 8$

$p < 4$

$p+4 > -8$

$p > -12$