

Types of Non-Linear Function - Answers

Section 1 – Quadratic functions

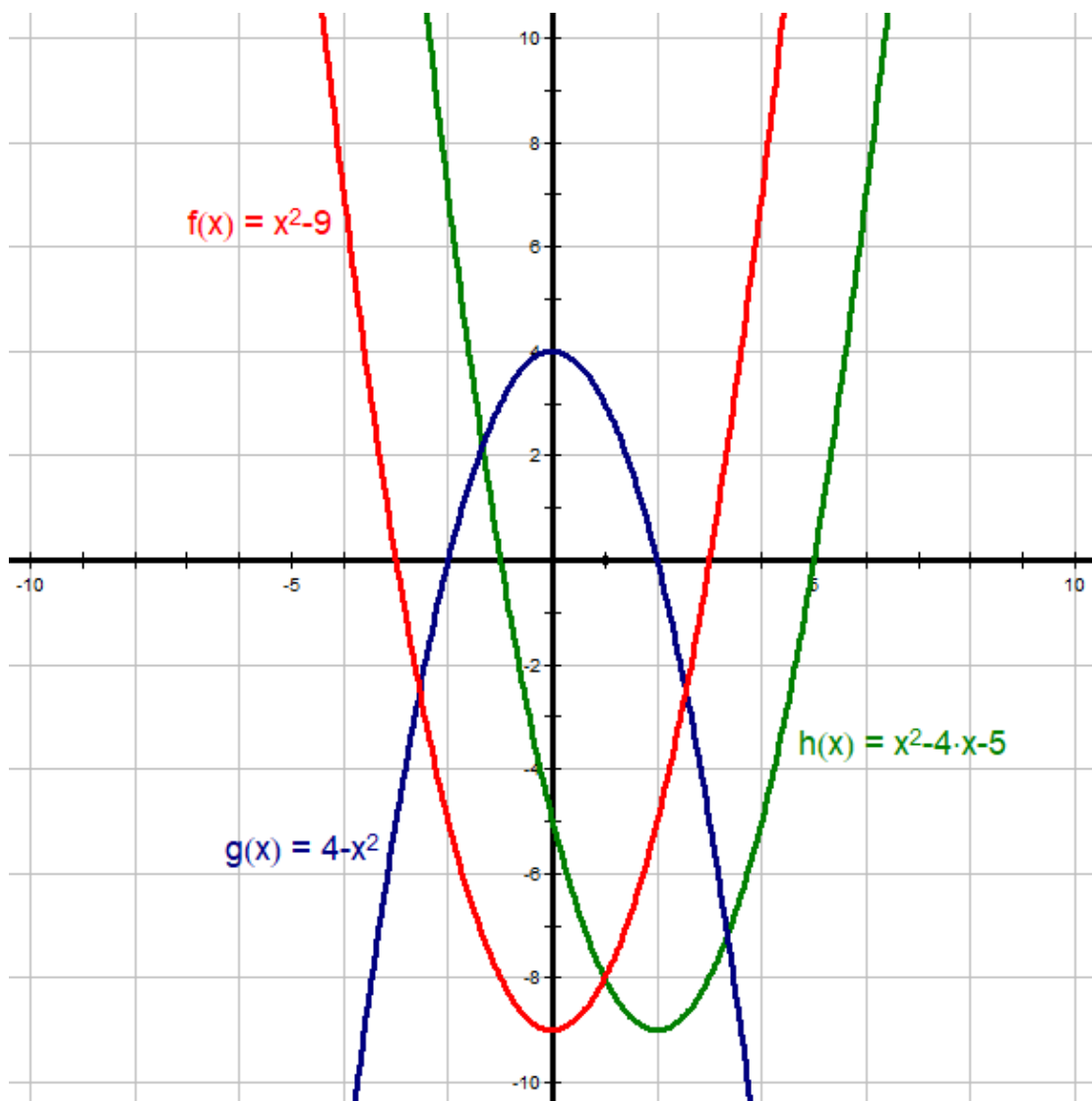
Use the tables and grid to plot the following functions:

$f(x) = x^2 - 9$									
x	-4	-3	-2	-1	0	1	2	3	4
y	7	0	-5	-8	-9	-8	-5	0	7

$g(x) = 4 - x^2$									
x	-4	-3	-2	-1	0	1	2	3	4
y	-12	-5	0	3	4	3	0	-5	-12

$h(x) = x^2 - 4x - 5$									
x	-2	-1	0	1	2	3	4	5	6
y	7	0	-5	-8	-9	-8	-5	0	7

You will have to scale the grid appropriately.



Section 2 – Cubic functions

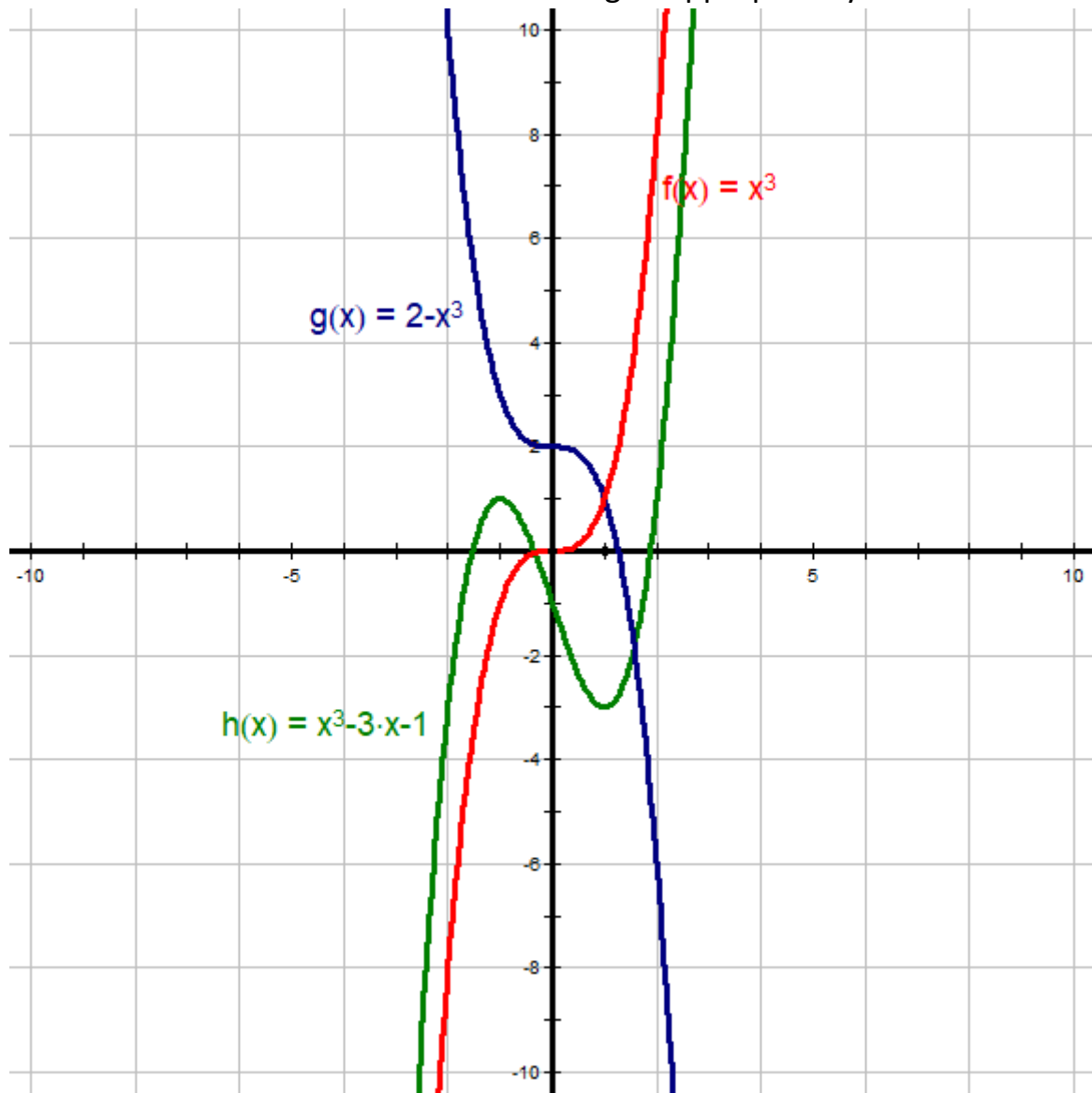
Use the tables and grid to plot the following functions:

$f(x) = x^3$							
x	-3	-2	-1	0	1	2	3
y	-27	-8	-1	0	1	8	27

$g(x) = 2 - x^3$							
x	-3	-2	-1	0	1	2	3
y	29	10	3	2	1	-6	-25

$h(x) = x^3 - 3x - 1$							
x	-3	-2	-1	0	1	2	3
y	-19	-3	1	-1	-3	1	17

You will have to scale the grid appropriately.



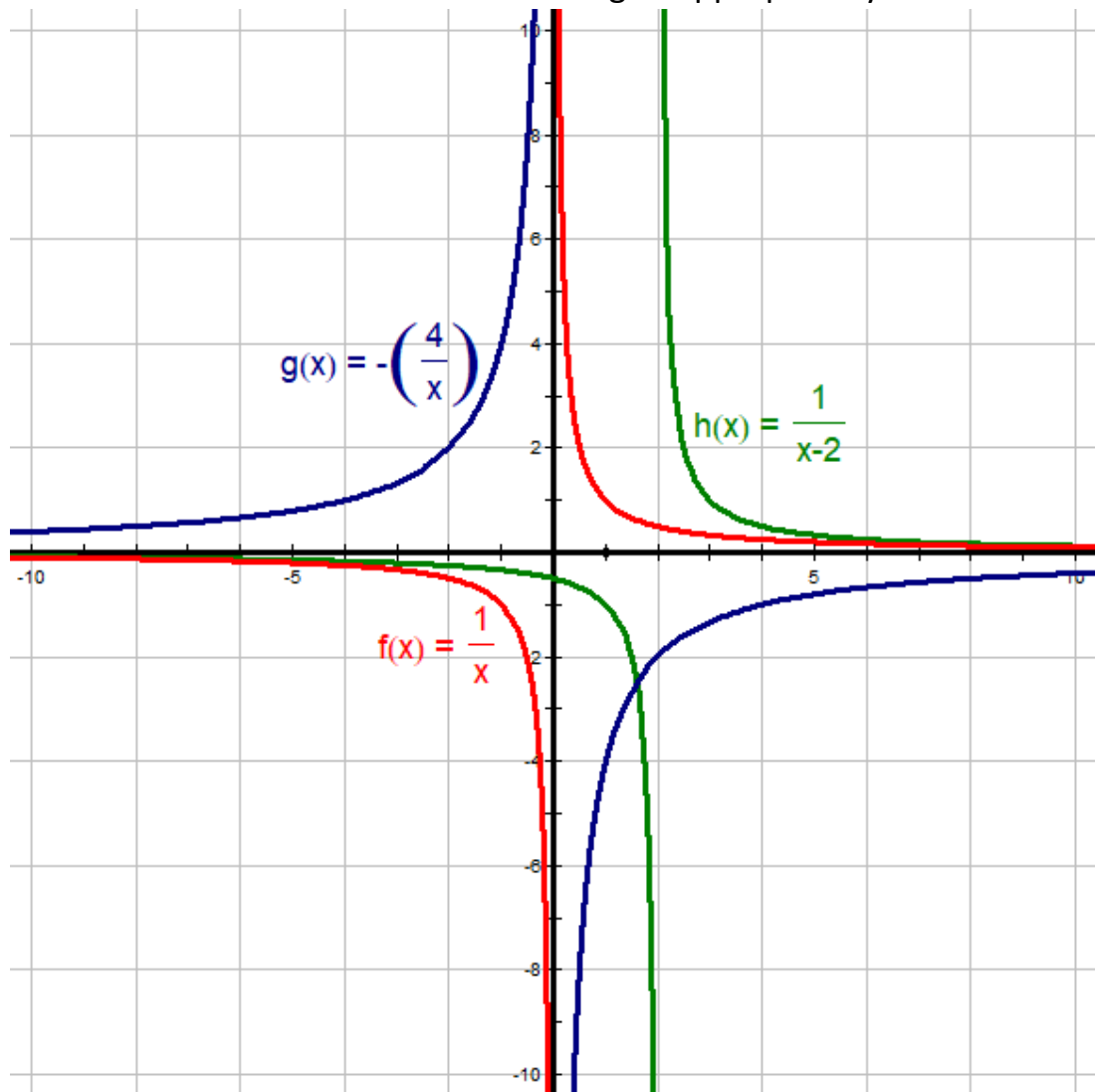
Section 3 – Reciprocal functions

$f(x) = \frac{1}{x}$									
x	-5	-2	-1	-0.5	0	0.5	1	2	5
y	-0.2	-0.5	-1	-2	∞	2	1	0.5	0.2

$g(x) = -\frac{4}{x}$									
x	-8	-2	-1	-0.5	0	0.5	1	2	8
y	0.5	2	4	8	∞	-8	-4	-2	-0.5

$h(x) = \frac{1}{x-2}$									
x	-2	0	1	1.5	2	2.5	3	4	6
y	-0.25	-0.5	-1	-2	∞	2	1	0.5	0.25

You will have to scale the grid appropriately.



Section 4 – Exponential functions

Use the tables and grid to plot the following functions:

$f(x) = 2^x$									
x	-4	-3	-2	-1	0	1	2	3	4
y	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	1	2	4	8	16

$g(x) = 3^{-x}$									
x	-4	-3	-2	-1	0	1	2	3	4
y	$\frac{1}{81}$	$\frac{1}{27}$	$\frac{1}{9}$	$\frac{1}{3}$	1	3	9	27	81

$h(x) = 2^x - 3$									
x	-4	-3	-2	-1	0	1	2	3	4
y	$-\frac{47}{16}$	$-\frac{23}{8}$	$-\frac{11}{4}$	$-\frac{5}{2}$	-2	-1	1	5	13

You will have to scale the grid appropriately.

