Name _____

Linear

rule: _____graph looks like a _____

Tables _____, _____ positive slope _____ negative slope _____

Exponential

rule: _____graph looks like a _____

Tables _____, _____ growth _____ decay _____

Rational

rule: _____graph looks like a _____

Tables _____, _____

Quadratic

rule: _____graph looks like a _____

Tables _____, _____ positive "a" (opens up) _____ negative "a" (opens down)_____

Absolute Value

rule: _____graph looks like a _____

Tables _____, _____ positive "a" (opens up) _____ negative "a" (opens down)_____

A

x	y
-2	-10
-1	-7
0	-4
1	-1
2	2
3	5
4	8

B

x	y
-2	8
-1	2
0	0
1	2
2	8
3	18
4	32

C

x	y
-2	-1
-1	-2
0	error
1	2
2	1
3	.67
4	0.5

D

x	y
-2	8
-1	4
0	0
1	4
2	8
3	12
4	16

E

x	y
-2	48
-1	12
0	3
1	0.75
2	0.1875
3	0.046875
4	0.01171875

F

x	y
-2	12
-1	7
0	2
1	-3
2	-8
3	-13
4	-18

G

x	y
-2	0.59259
-1	1.3333333
0	3
1	6.75
2	15.1875
3	34.171875
4	76.88671875

H

x	y
-2	1.5
-1	3
0	error
1	3
2	1.5
3	1
4	0.75

I

x	y
-2	-12
-1	-3
0	0
1	-3
2	-12
3	-27
4	-48

J

x	y
-2	-6
-1	-3
0	0
1	-3
2	-6
3	-9
4	-12

Rules:

$y = \frac{a}{x}$ $y = a(b)^x$ $y = ax + b$ $y = a|x| + b$ $y = ax^2 + b$

Name Key

Linear
rule: $y = ax + b$ graph looks like a line
Tables A, F positive slope A negative slope F

Exponential
rule: $y = ab^x$ graph looks like a curve
Tables E, G growth G decay E

Rational
rule: $y = \frac{a}{x}$ graph looks like a two curves
Tables C, H

Quadratic
rule: $y = ax^2 + b$ graph looks like a ∪ parabola
Tables B, I positive "a" (opens up) B negative "a" (opens down) I
vertex = min vertex = max

Absolute Value
rule: $y = a|x| + b$ graph looks like a ∧
Tables D, J positive "a" (opens up) D negative "a" (opens down) J

A

x	y
-2	-10
-1	-7
0	-4
1	-1
2	2
3	5
4	8

+3
+3

B

x	y
-2	8
-1	2
0	0
1	2
2	8
3	18
4	32

-6
-2
+2
+6

Symmetry!
not linear change
down up

C

x	y
-2	-1
-1	-2
0	error
1	2
2	1
3	.67
4	0.5

rational $\frac{a}{x}$
can't divide by 0!

D

x	y
-2	8
-1	4
0	0
1	4
2	8
3	12
4	16

-4
-4
+4
+4

Symmetry
linear!!
down up

E

x	y
-2	48
-1	12
0	3
1	0.75
2	0.1875
3	0.046875
4	0.01171875

exponential
↓ decreasing
y values =
decay

F

x	y
-2	12
-1	7
0	2
1	-3
2	-8
3	-13
4	-18

-5
-5
-5

G

x	y
-2	0.59259
-1	1.3333333
0	3
1	6.75
2	15.1875
3	34.171875
4	76.88671875

exponential
increasing
y-values
=
growth

H

x	y
-2	1.5
-1	3
0	error
1	3
2	1.5
3	1
4	0.75

I

x	y
-2	-12
-1	-3
0	0
1	-3
2	-12
3	-27
4	-48

symmetry

+9
+3
-3
-9

not linear

up
down

J

x	y
-2	-6
-1	-3
0	0
1	-3
2	-6
3	-9
4	-12

symmetry

+3
+3
-3
-3

linear

up
down

Rules:

$y = \frac{a}{x}$ $y = a(b)^x$ $y = ax + b$ $y = a|x| + b$ $y = ax^2 + b$