

Based on the difference in y-values, identify the graph as linear, quadratic, exponential, or neither.

1.

x	-3	-2	-1	0	1	2	3
y	14	10	6	2	-2	-6	-10

2.

x	-3	-2	-1	0	1	2	3
y	$\frac{1}{2}$	1	2	4	8	16	32

3.

x	-3	-2	-1	0	1	2	3
y	21	12	5	0	-3	-4	-3

4.

x	-3	-2	-1	0	1	2	3
y	-16	-13	-10	-7	-4	-1	2

5.

x	-3	-2	-1	0	1	2	3
y	-14	-9	-4	1	6	11	16

6.

x	-3	-2	-1	0	1	2	3
y	-18	-6	-2	0	2	6	18

7.

x	-3	-2	-1	0	1	2	3
y	4	8	16	32	64	128	256

8.

x	-3	-2	-1	0	1	2	3
y	$\frac{1}{27}$	$\frac{1}{9}$	$\frac{1}{3}$	1	3	9	27

9.

x	-3	-2	-1	0	1	2	3
y	30	20	12	6	2	0	0

10.

x	-3	-2	-1	0	1	2	3
y	11	9	7	5	3	1	-1

11.

x	-3	-2	-1	0	1	2	3
y	$\frac{1}{9}$	$\frac{1}{3}$	1	3	9	27	81

12.

x	-3	-2	-1	0	1	2	3
y	-27	-9	-3	0	3	9	27

**Identify the following equations as linear, quadratic or exponential.**

1. $y = 10\left(\frac{1}{3}\right)^x$ <input type="checkbox"/> linear <input type="checkbox"/> quadratic <input type="checkbox"/> exponential	2. $y = 5 + 7(x)$ <input type="checkbox"/> linear <input type="checkbox"/> quadratic <input type="checkbox"/> exponential
3. $y = (x+3)^2 - 4$ <input type="checkbox"/> linear <input type="checkbox"/> quadratic <input type="checkbox"/> exponential	4. $y = -2(x) + 5$ <input type="checkbox"/> linear <input type="checkbox"/> quadratic <input type="checkbox"/> exponential
5. $y = -\frac{1}{2}(3)^x$ <input type="checkbox"/> linear <input type="checkbox"/> quadratic <input type="checkbox"/> exponential	6. $y = \frac{1}{3}(x)^2 - 4$ <input type="checkbox"/> linear <input type="checkbox"/> quadratic <input type="checkbox"/> exponential

All linear functions can be written as \_\_\_\_\_.

All exponential functions can be written as \_\_\_\_\_.

All quadratic functions can be written as \_\_\_\_\_.