Mathematics

Linear and Non-linear Graphs

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Try this

Match up ....

$y = 5x$ | $y = x^2$ | $y = \dfrac{x}{5}$ | $x + y = 5$ | $y = 5$

y is five times as big as x

y is the square of x

The sum of x and y is 5

y is one fifth of x

What is y if: $x = 0$?

$x = 5$?

What is x if $y = 0$?

y is always equal to 5

Connect

Linear

$y = 5x$

x	-3	-2	-1	0	1	2	3
y							

Non-linear

$y = 5$

x	-3	-2	-1	0	1	2	3
y							

$y = x^2$

x	-3	-2	-1	0	1	2	3
y							

Independent task

Decide if the following equations would produce linear or non-linear graphs.

If linear match the equation with the same straight line graph.

Check by testing with coordinates

$2y = x$		$y = x - 2$		$y - x = 2$
$y = 2 - x$	$x + y = 2$			$y - 2 = x$
$y = 2x$		$y = x + 2$	$2x = y$	

Explore

Make a table of value for x between -4 and 4. Sketch what the graphs look like.

$y = 5x$ $y = x^2$ $y^2 = x$ $y = \dfrac{x}{5}$ $y = \dfrac{5}{x}$ $y = 5$