

MasterMath

Comparing Linear and Non-Linear Functions

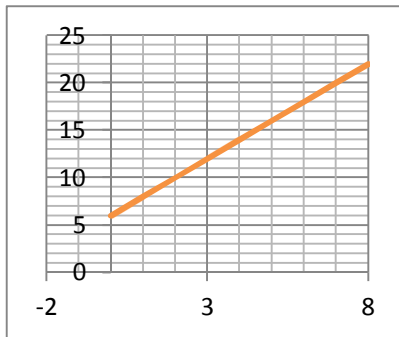
Name _____

Date _____

1. Are these functions linear or non-linear

Function	Re-written	Linear or Non-Linear
$x + y = 6$	$y = -x + 6$	linear
$3y = 9x - 12$	$y = x - 4$	linear
$xy = 16$	$y = 16 \div x$	non-linear
$y^2 = x + 4$	$y = \sqrt{x+4}$	non-linear
$x = 3y + 2$	$y = .33x - .67$	linear
$y^2 = x^2$	$y = x$	linear
$y^2 = x^3$	$y = x$	linear

2. Does this graph represent a linear function? What is the equation of the function?



yes
$y = 2x + 6$

3. Describe three ways to determine if a function is linear.

Make a table and see if the rate of change for x and y is constant
See if the equation can be re-written into slope-y intercept form
Graph the function and see if it's a straight line

4. Does this table represent a linear function?

x	y	Δx	Δy
0	6		
1	8	1	2
2	10	1	2
3	12	1	2
4	14	1	2
5	16	1	2

yes

5. You have a job as a grocery clerk that pays you \$7.25 per hour. Assuming you get paid for partial hours, write an equation that will calculate how much you earn for any number of hours worked. Is this a linear relationship?

equation	$p = 7.5h$
linear?	yes