Name: _____
Block: _____

Algebra 2: Relations, Functions, Graphs
Group A

There are **20 questions** in this test, each worth **2pts** .
There is **1 additional** extra-credit questions, worth **1pt**.
You have **30 minutes** to complete the test (more if you have accommodations).

=== Start of test

For each of the following, choose the most specific name from "Relation", "Function", or "1-to-1 function":

1) $(2,4)$ $(6,8)$ $(-1,4)$ $(0,0)$

a) Relation b) Function c) 1-to-1 function

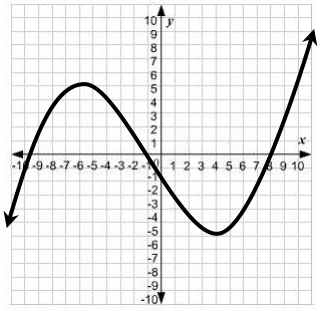
2) $(-1,2)$ $(2,-1)$ $(-3,4)$ $(4,-3)$

a) Relation b) Function c) 1-to-1 function

3) $(4,2)$ $(1,3)$ $(4,6)$ $(1,1)$

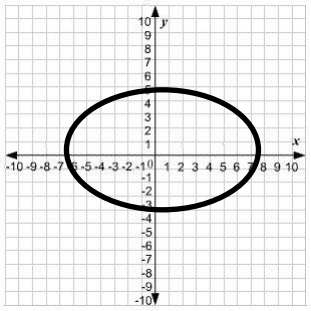
a) Relation b) Function c) 1-to-1 function

4)



a) Relation b) Function c) 1-to-1 function

5)



a) Relation b) Function c) 1-to-1 function

===

Find the equation for the following lines:

5) With slope = 2 and y-intercept=-1. Give your result in slope-intercept form.

6) Through (3,-2) with slope =2. Give your result in slope-intercept form.

7) Through (2,1) and (4,0). Give your result in slope-intercept form.

8) Through (3,6) and (4,8). Give your result in slope-intercept form.

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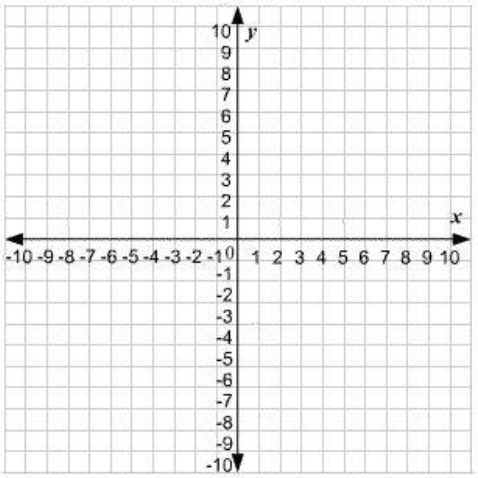
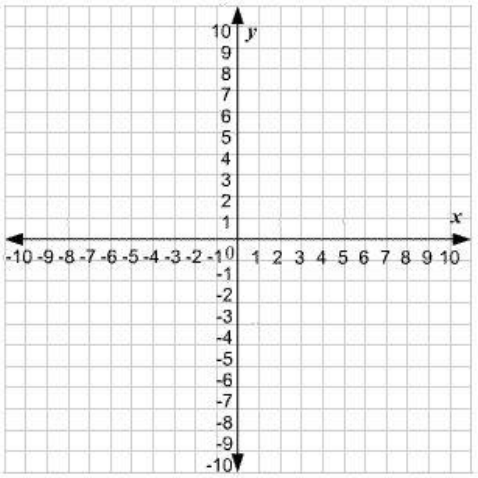
Sketch the graph of each line

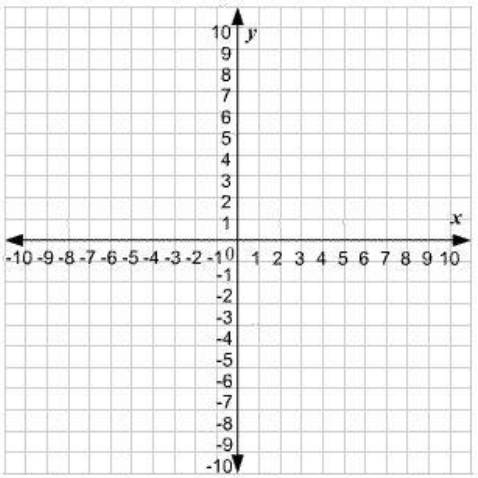
9) $x = 3$



10) $y = -2x - 2$



11) $2x + y = 4$



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12) Is the following equation linear $(y-3x)\cdot 2=(5x-y)+1$?

13) What is the slope of the line going through the points $(3,0)$ and $(-1,0)$?

14) What is the slope of the line given by $(2y-3)=3x+5$?

===

Given the following definitions:

$f(x)=2x+5$, $g(x)=x^2-3$, $h(x)=|7-x|$

Find the following:

15) $f(3)$

16) $g(-1)$

17) $g\big(h(6)\big)$

18) $h(-7)$

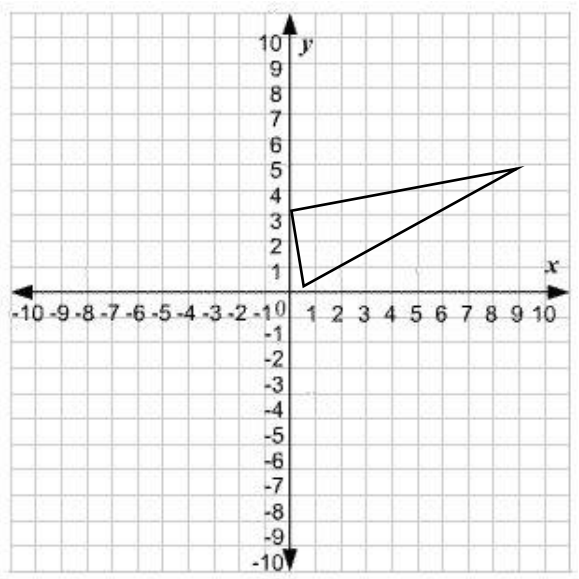
19) $g(2x)$

20) $f(\frac{x}{2}+4)$

===

Extra-credit

21) The picture below describes a right triangle. The 3 sides have slopes denoted as m_1, m_2, m_3. What can you say about the value of the product $(m_1 \cdot m_2 \cdot m_3)$? See 4 options below.



a) $-\infty < (m_1 \cdot m_2 \cdot m_3) \leq -1$
b) $-1 \leq (m_1 \cdot m_2 \cdot m_3) \leq 0$
c) $0 \leq (m_1 \cdot m_2 \cdot m_3) \leq 1$
d) $1 \leq (m_1 \cdot m_2 \cdot m_3) < \infty$

=== End of test