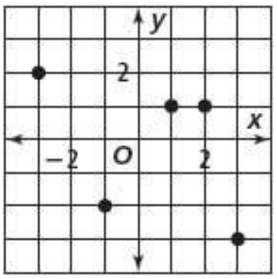
Algebra II Semester 1 Final Review- Unit 1

1. Find the ***domain*** and ***range*** of each relation, and determine whether it is a ***function***.

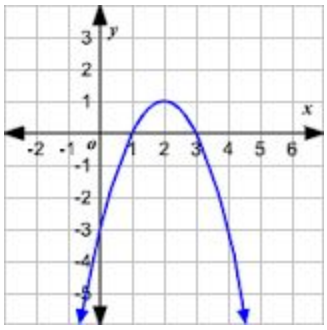
a.

$\{(2,1),(-4,5),(1,7),(2,-3),(-1,2)\}$

b.

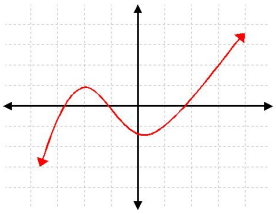


c.

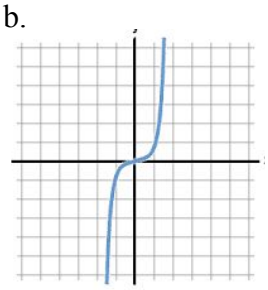


2. Determine whether each relation is a ***function***.

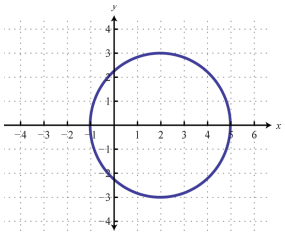
a.



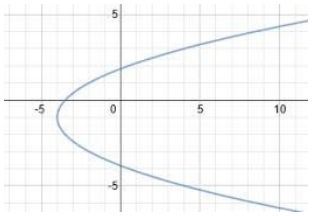
b.



c.



d.



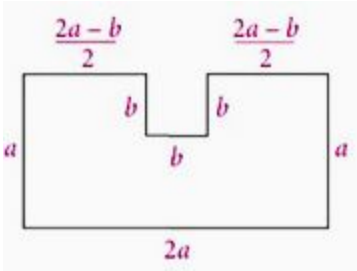
3. Suppose $f(x) = -2x^2 + x - 4$ and $g(x) = 2|x| + 3$. Find each value.

a. $f(-1)$ b. $f(2)$ c. $g(-\frac{1}{2})$

4. Use the points (1, 5) and (−3, 3) to:
a. Find the slope.
b. Find the point-slope form equation.
c. Find the slope-intercept form equation.
d. Find the *x*- and *y*- intercepts. *Write them as ordered pairs.*

5. Write the slope-intercept form equation of the line with:
a. slope $= -3$ and passing through the point: $(1,5)$ *b.* slope $= \frac{5}{6}$ and passing through the point: $(22,12)$

6. Find the perimeter of the figure shown below.



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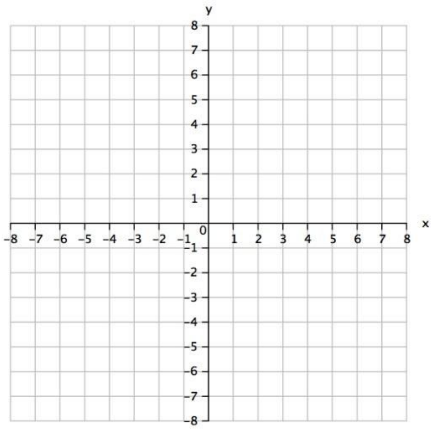
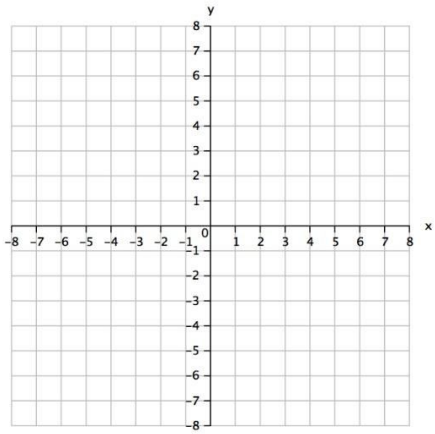
7. ***Graph*** each function.

a. $y = 2|x + 4| - 3$



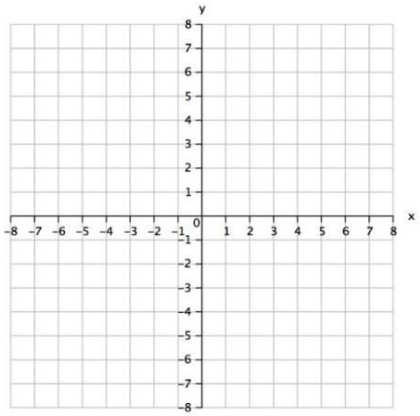
Vertex:
Domain:
Range:

b. $y = -|x - 4| + 5$



Vertex:
Domain:
Range:

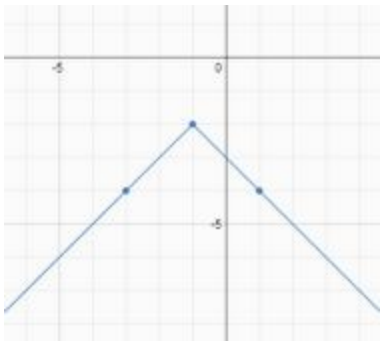
c. $4x - 3y = -12$



Slope-intercept form:
Slope:
y-intercept:
Domain:
Range:

8. Describe the transformations applied to the parent function $y = |x|$ and write the equation for the absolute value function.

a.



b. $y = |x|$ right 1, up 2, with a vertical stretch factor of 3

9. Solve each equation.

a. $2(4x - 3) - 8 = 4 + 2x$

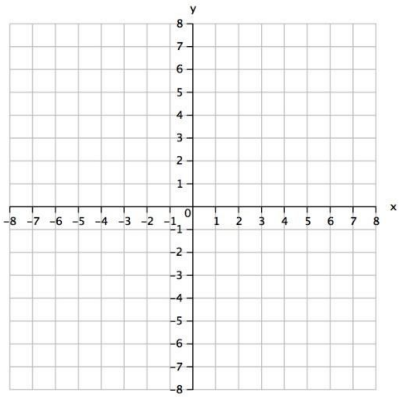
b. $10(1 - 2t) = -5(2t - 1)$

c. $2|3x - 1| + 5 = 33$

d. $|2x + 5| = 41$

10. Solve each system of linear equations by ***graphing***.

a. $y = 2x + 1$
$y = -x + 7$



b. $-5x + y = -9$
$x + 3y = 21$