M1314 Exam 2 (2.1-2.8) (50 points) Name: _____

Scientific Calculator only. Show all work for credit. Professor McDaniel

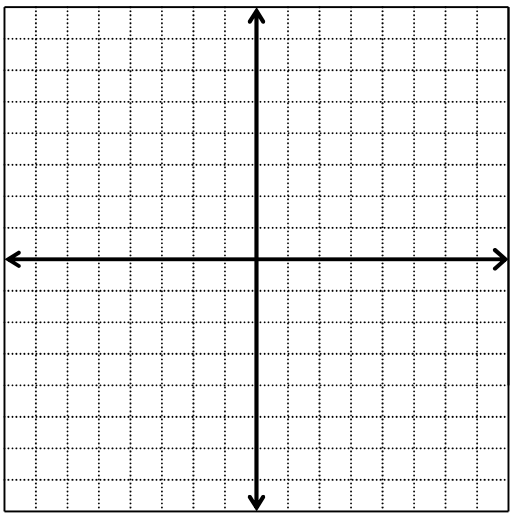
Find the midpoint and distance of the line segment *PQ*. (1 pt each)

1.) $P(6,4)$ and $Q(-4,-7)$ Midpoint = _____ Distance = _____ (exact value)

Write the equation in standard form and graph. (6 pts)

2.) $x^2 + y^2 + 2x - 4y + 1 = 0$ Center: _____

Radius: _____



Standard Form _____

Complete the following questions. (4 points)

3.) $\{(0,6), (3,5), (4,2), (6,6)\}$

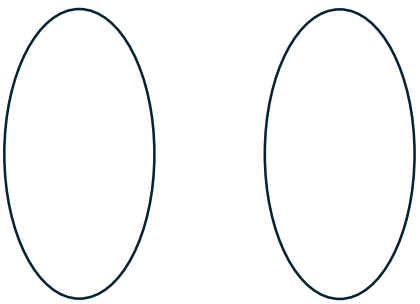
a.) State the Domain and Range in set notation

D: _____

R: _____

b.) Is the relation a function? Explain why or why not.

c.) Construct a mapping of the relation



Write a different relation than problem 3 using a table that is NOT a function. (2 pts)

4.)

x	y

Let $g(x) = -x^2 - 2x$. Evaluate the following. (1 pts)

5.) $g(2) =$ _____

6.) $g(-3) =$ _____

Find the domain and range in interval notation of the following functions. (2 pts each blank)

7.) $f(x) = \frac{2}{2x+3} - 3$

D: _____

R: _____

8.) $g(x) = -3(x-1)^2 + 18$

D: _____

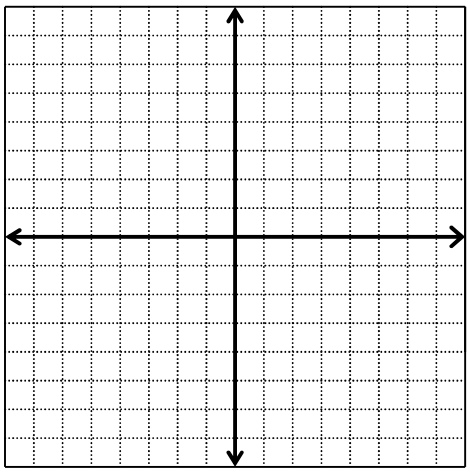
R: _____

Graph the following and answer the additional questions. (3 points each)

9.) $-4x + 8y = 16$

Slope: _____

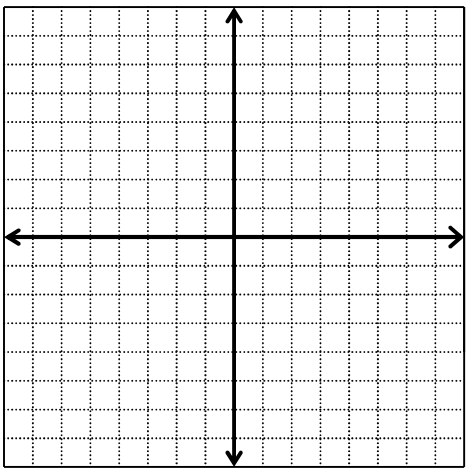
y-intercept: _____



10.) $-\frac{1}{2}y = x + 2$

Slope: _____

y-intercept: _____



Write the equation of the line going through the given point in the indicated form. (3 points each)

11.) $m = -\frac{3}{5}$; $(4, -5)$ standard form _____

12.) $(4, -1)$ *perpendicular* to the line $y = 3x - 1$ in slope intercept form _____

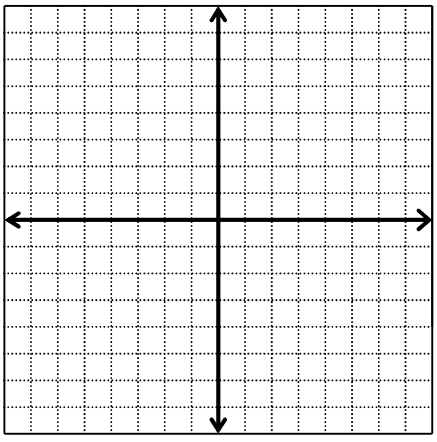
Graph the following, circle the transformations and give the domain and range in interval notation. (5 points each)

13.) $f(x) = -\frac{1}{2}(x + 3)^2$

Domain: _____

Range: _____

V.Stretch	Right	Up	ROX
V.Shrink	Left	Down	ROY



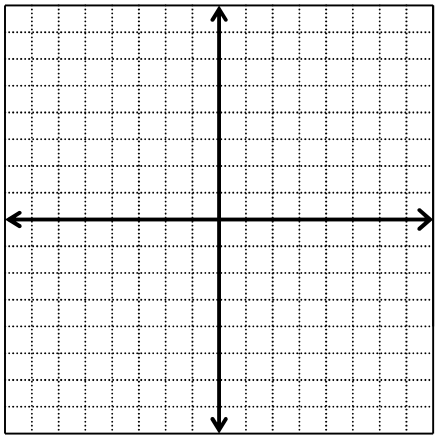
(Graph 5 points)

14.) $f(x) = 2\sqrt{x} - 1$

V.Stretch	Right	Up	ROX
V.Shrink	Left	Down	ROY

Domain: _____

Range: _____



(Graph 3 points)

Answer the following involving composite functions. Answer domain in interval notation and fully simplify the composite. (1 pt each)

15.) Let $f(x) = 2x^2 + 1$ and $g(x) = \sqrt{x-1}$

a.) Domain of $f(x) =$ _____

b.) Domain of $g(x) =$ _____

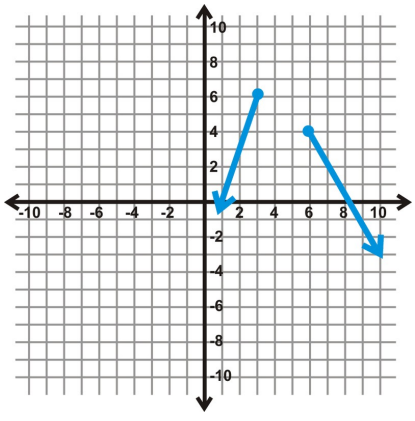
c.) $(f \circ g)(x) =$ _____

d.) Domain of $(f \circ g)(x) =$ _____

Bonus +3 pts

Find the domain and range of the following in interval notation.

16.)



Domain: _____

Range: _____