Name _____ Class _____ Date _____

Advanced Algebra D Review

1. Define a function. How do you know if a relation is a function?

_____

_____

Write the standard form, slope-intercept form, and point slope form for an equation for the lines containing the following points.

2. (–1, 3) and (2, –5)

Standard_____

Pt Slope_____

SlopeInt_____

3. (–4, –2) and (2, 3)

Standard_____

Pt Slope_____

SlopeInt_____

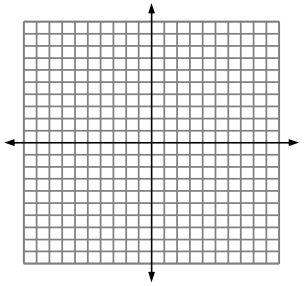
Find the *x*- and *y*-intercepts of each line and write the equation in standard form and graph.

4. $y = \frac{2}{7}x - 1$

x-int _____

y-int_____

St Form_____

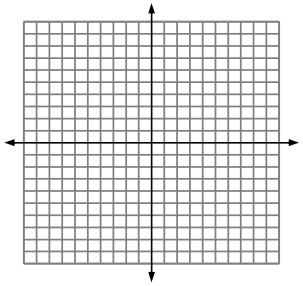


5. $y = -\frac{4}{3}x + 6$

x-int _____

y-int_____

St Form_____



6. A. Find the equation of a line perpendicular to $2x - 5y = 3$ passing through (-10, 2).

B . Find the equation of a line parallel to $2x - 5y = 3$ passing through (-10, 2).

For questions 7-9, determine whether y varies directly with x. If so, find the constant of variation.

7.

X	Y
6	4
12	8
14	9 1/3

k=_____

Equation for Direct Variation

_____

8. y + 4 = -6x

k=_____

Equation for Direct Variation

_____

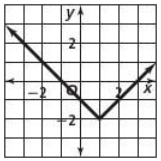
9. The shoe size of an toddler varies directly with their height. A 2-year old has a size 6 foot and a height of 34 inches.

a. Write an equation that relates the height with shoe size.

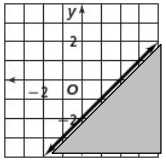
b. How tall will the toddler be when his shoe size is 8?

Write an equation for each function.

10.

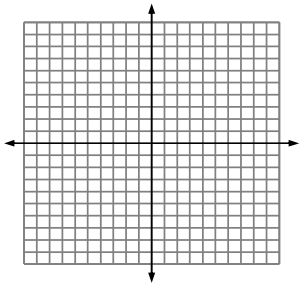


11.

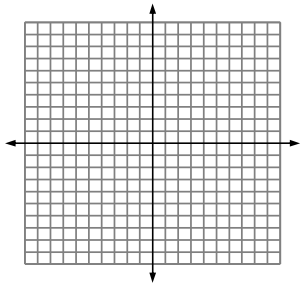


Graph each function. State the domain and range of each.

12. $y > 3x - 1$



13. $y < -3|x+2| - 4$



14. Graph the function and state the domain and range.

$$f(x) = \begin{cases} 4x-1, \text{ if } x < -4 \\ -2, \quad \text{if } -4 \le x < 1 \\ 5 \quad \text{if } x = 1 \\ -3x+1, \text{ if } 3 \le x \le 6 \end{cases}$$