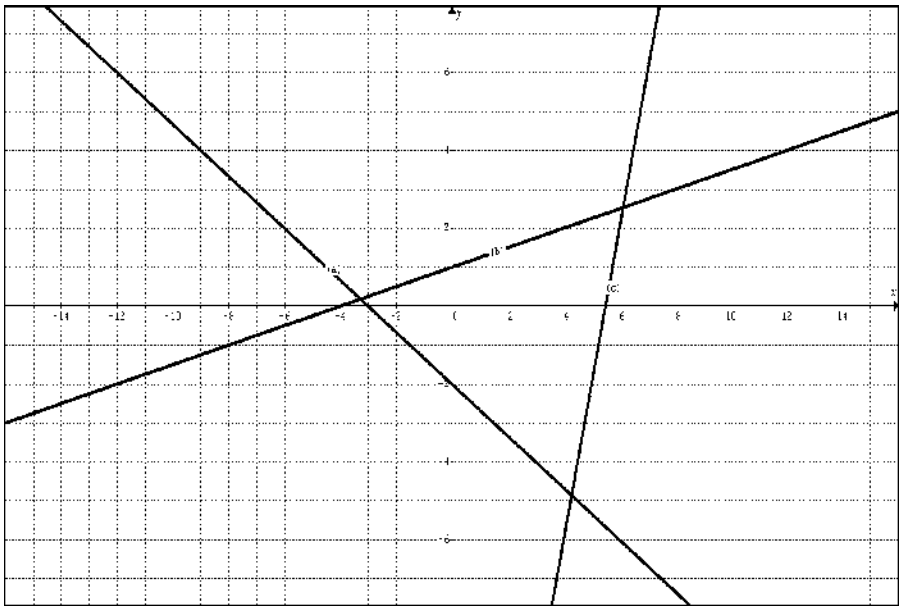
Quiz Linear Functions quiz version 1 2012.doc Name_____

1) Determine the equation of each line shown.

a) _____

b) _____



c) _____

2) Write the equation of the line that passes through point $\left(0,\frac{1}{3}\right)$ and has an x-intercept of $-\frac{5}{3}$.

3) State the domain of each function below.

a) $g(x) = \dfrac{\sqrt{x+1}}{x}$ Domain: _____

b) $h(x) = 1 - \sqrt{5-2x}$ Domain: _____

c) $h(x) = \dfrac{3x}{x^2+4}$ Domain: _____

4) Match each equation with its graph below. (Graphs are not drawn to scale)

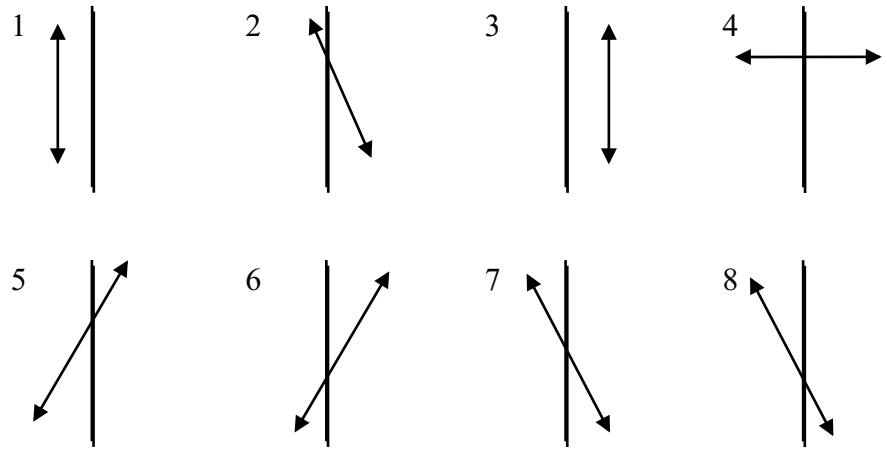
_____ a) $x = 3$

_____ b) $y = -2x$

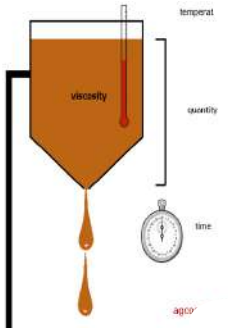
_____ c) $2x + 1 = -y$

_____ d) $y = \dfrac{2-3x}{-2}$

_____ e) Slope is negative, y-intercept = 2



5) The viscosity of a liquid, or its resistance to flow, depends on the liquid's temperature. Pancake syrup is a familiar example. Straight from the refrigerator it pours slowly. When warmed, its viscosity decreases and it becomes quite runny.



Certain motor oils have a viscosity of 25 centistokes at a temperature of 190° F, and a viscosity of 10 centistokes at 220° F. (Centistokes is a unit used for measuring viscosity.) Assume viscosity and temperatures form a linear relationship.

The following equation models this relationship: $y = -\frac{1}{2}x + 120$

_____ a) What does x represent in the equation above?
(1) Viscosity
(2) Temperature
(3) The change in Viscosity per degree Fahrenheit
(4) The change in Temperature per centistokes

_____ b) Explain the meaning of the slope in the above equation?
(1) Each 1 degree the temperature increases, the viscosity decreases by 0.5 centistokes.
(2) Each 0.5 degree the temperature increases, the viscosity decreases by 1 centistokes.
(3) Each 1 degree the temperature decreases, the viscosity decreases by 1 centistokes.
(4) Each 0.5 degree the temperature decreases, the viscosity decreases by 1 centistokes.

_____ c) What does the x-intercept tell you about viscosity and temperature?
(1) The viscosity of oil is 0 at 120 degrees Fahrenheit.
(2) The viscosity of oil is 120 at 0 degrees Fahrenheit.
(3) The viscosity of oil is 0 at 240 degrees Fahrenheit.
(4) The viscosity of oil is 240 at 0 degrees Fahrenheit.

6) A particular airline charges a fee (in dollars) for luggage above a certain weight (in lbs.), using the following equation: $y = 2x - 80$.

_____ a) What does y represent in the equation above?
(1) Charge in dollars
(2) Weight in lbs.
(3) Dollars per lb.
(4) Lbs. per dollars

_____ b) Above what weight does the airline most likely begin charging for luggage?
(1) -80 lbs. (2) 0 lbs. (3) 40 lbs. (4) 80 lbs.

_____ c) What must be true given the above equation?
(1) Each person can bring 2 pieces of luggage.
(2) The luggage fee is 2 dollars per lb. above a certain weight.
(3) The airline charges 1 dollar for every 2 lbs. above a certain weight.
(4) Every 2 pieces of luggage weighs at least 80 lbs.

_____7) Which statement is true about the following data?

x	y
-2	8
4	-10
8	-22

(1) The data is linear and has a slope of -9.
(2) The data is linear and has a slope of -3.
(3) The data is linear and has a slope of -1/3.
(4) The data is linear and has a slope of 3.
(5) The data is NOT linear does not have a constant slope.

---------- BONUS QUESTION ----------

Solve for x: $x(a-1)=b(a+2x)$