THE CHEMISTRY LAB

In your new role as chemistry lab assistant, your responsibilities include stocking the chemistry lab with the proper supplies. After taking inventory, you record your current materials and compare it to the lab requirement to determine which supplies you need to order. After preparing your order, water is spilled and some of the information becomes illegible. Use the table below to recreate your order and fill in the missing information.

	CURRENT INVENTORY	LAB REQUIREMENT	QUANTITY ORDERED	TOTAL COST
BEAKER ($2.95 EACH)		45	13	
TEST TUBE ($9.36 12-PACK)	3	65		$56.16
PIPETTE ($13.59 50-PACK)	18	250		
SAFETY GOGGLES ($7.70 2-PACK)		33		$100.10
BUNSEN BURNER ($22.95 EACH)		12		$206.55

TOTAL ORDER COST: _____

When placing your order, you have the choice between three different shipping options:

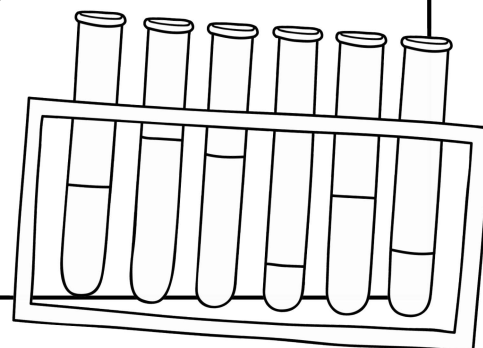| AIR SPEED	FLY FAST	V SHIP
$45.57	$38.24	$48.40
3 DAY AIR	2 DAY AIR	5 DAY GROUND

Use the information above to determine the cost of shipping per day, or the constant of proportionality, for each shipping option.
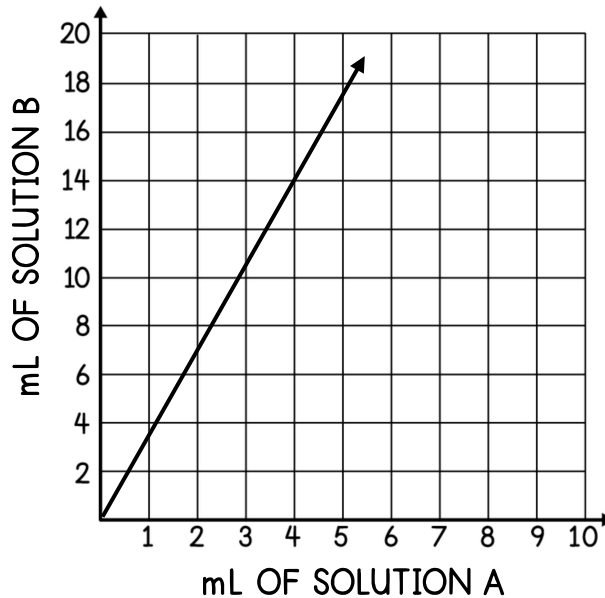
AIR SPEED: _____

FLY FAST: _____

V SHIP: _____

Name _____

Date _____ Pd_____

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Your chemistry lab has been tasked with creating a solution for a disinfectant. The disinfectant is a mixture of solution A and solution B. The ratio of solution A to solution B is shown in the graph below.
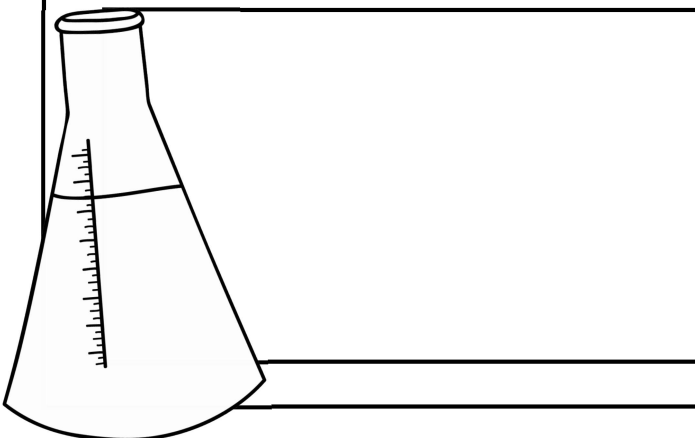
In order to produce an effective disinfectant, you know that the ratio of solution A to solution B must be equivalent. Use this information from the graph to create a table, equation, and verbal description of the data.

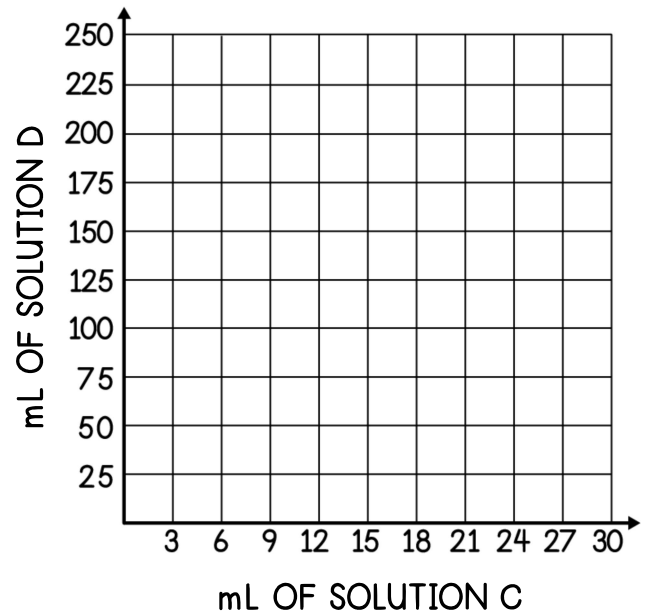| SOLUTION A (mL)					
SOLUTION B (mL)					
DISINFECTANT (mL)					

EQUATION

VERBAL DESCRIPTION

Name _____

Date _____ Pd_____

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A separate mixture is also being tested in the laboratory. Complete the missing parts of the table to determine the ratio of solution C to solution D. Then, represent it on the graph.

SOLUTION C (mL)	SOLUTION D (mL)	DISINFECTANT (mL)
		28
6		
12		
		140
21	175	

How many milliliters of solution C are needed when using 75 milliliters of solution D?

How many milliliters of solution D are required to create 168 milliliters of disinfectant?

In this situation, what does the ordered pair $(1, 8\frac{1}{3})$ represent?

Compare and contrast the ratio of solution A and B to the ratio of solution C and D. Record your observations on how the ratio affects the amount of solution needed.