Unit: Proportional Relationships Performance Task

Vame	
Date	Pd



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:

\$45.57 3 DAY AIR \$38.24 2 DAY AIR V SHIP \$48.40 5 DAY GROUND

Use the information above to	determine the cost of	shipping per day, or	r the constant of
proportionality, for each ship	ping option.		

AIR SPEED: _____

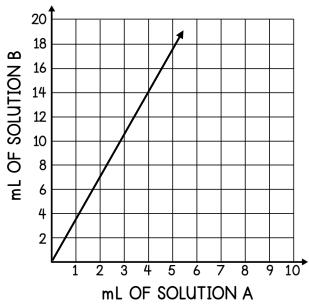
FLY FAST: _____

U SHIP: _____

Unit:	Proportional Relationships
Perfo	ormance Task

Name	
Date	Pd

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

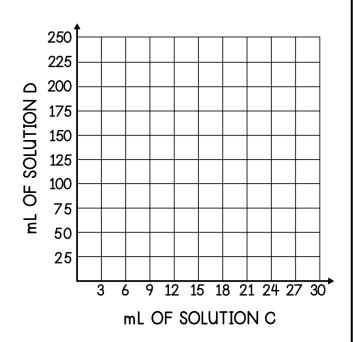
VERBAL DESCRIPTION	

Unit:	Proportional Relationships
Perfo	ormance Task

Name	
Date	Pd

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.

Unit: Proportional Relationships Performance Task

Name	ANSWER KEY		
Date		Pd	

— 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)	32	45	13	\$38.35
TEST TUBE (\$9.36 12-PACK)	3	65	72	\$56.16
PIPETTE (\$13.59 50-PACK)	18	250	250	\$67.95
SAFETY GOGGLES (\$7.70 2-PACK)	7 or 8	33	26	\$100.10
BUNSEN BURNER (\$22.95 EACH)	3	12	9	\$206.55

TOTAL ORDER COST:	\$469.11	
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When placing your order, you have the choice between three different shipping options:

\$45.57 3 DAY AIR \$38.24 2 DAY AIR V SHIP \$48.40 5 DAY GROUND

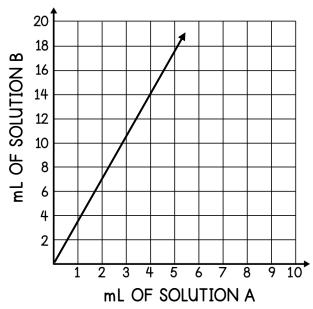
Use the information above to determine the cost of shipping per day, or the constant of proportionality, for each shipping option.

AIR SPEED: \$15.19

FLY FAST: ____\$19.12

V SHIP: ____\$9.68

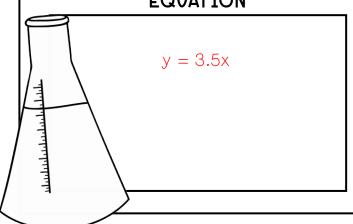
Your chemistry lab has been tasked with creating a solution for a disinfectant. The disinfectant is a mixture of solution A and solution B. The ratio of solution A to solution B is shown in the graph below.



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)	1	2	3	4	5	6
SOLUTION B (mL)	3.5	7	10.5	14	17.5	21
DISINFECTANT (mL)	4.5	9	13.5	18	22.5	27

EQUATION



VERBAL DESCRIPTION

Example: For every 2 mL of solution A, you will need 7 mL of solution B.

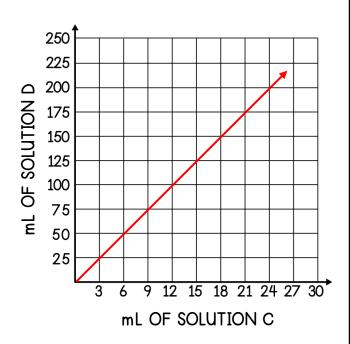
Unit: Proportional Relationships Performance Task

Name	ANSWER KEY		
Date		Pd	

THE CHEMISTRY LAB

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)
3	25	28
6	50	56
12	100	112
15	125	140
21	175	196



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

9 mL of solution C

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

You will need 18 mL of solution C and 150 mL of solution D

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

The ordered pair $(1, 8\frac{1}{3})$ represents the unit rate. For every 1 mL of solution C, you will need $8\frac{1}{3}$ mL of solution D.

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.

The ratio of solution A and B is 2:7, while the ratio of solution C and D is 3:25. In order to make the same amount of disinfectant, the amount of solutions A and B will be much closer than the amount of solutions C and D.

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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:

\$45.57 3 DAY AIR FLY FAST \$38.24 2 DAY AIR

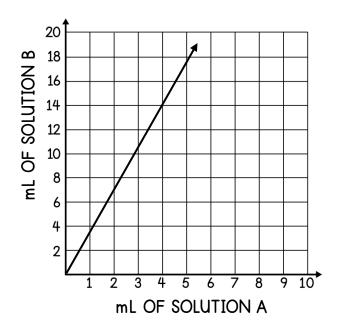
V SHIP \$48.40 5 DAY GROUND

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

AIR SPEED: F	LY FAST:
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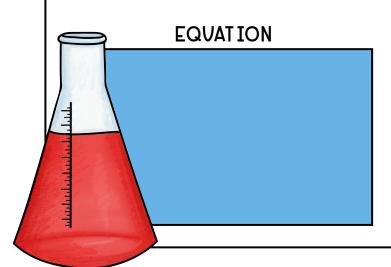
U SHIP: _____

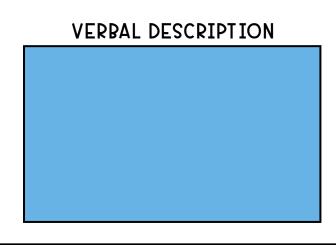
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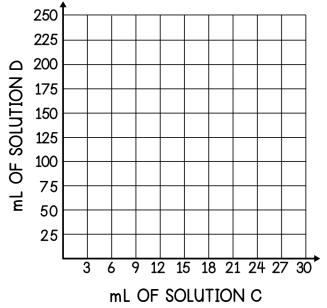
SOLUTION A (mL)			
SOLUTION B (mL)			
DISINFECTANT (mL)			





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 mL of solution C are needed when using 75 mL of solution D?

How many mL of solution D are required to create 168 mL 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.