Name _____

Algebra Road Trip Project *(50 pts)*

This summer, your family has decided to take a road trip! You will start in Indianapolis and travel to five other U.S. cities before returning home to Indianapolis. You will obviously need ALGEBRA in order to have fun!!!

Step 1: Plan your trip. You can visit any city in the US (lower 48), but I recommend cities already marked on the map. Choose the 5 cities you will be visiting below.   Also include the state.

Starting City	Indianapolis, IN
City #1	
City #2	
City #3	
City #4	
City #5	
Ending City	Indianapolis, IN

Step 2: Using a ruler, draw a straight line connecting each city you will be visiting.
(Draw a straight line from Indy to City #1. Then, draw a straight line from City #1 to City #2, etc.)

Step 3: Using the ruler, measure the length of the line connecting each city in your trip.
ROUND EACH DISTANCE TO THE NEAREST QUARTER INCH. Fill out the following table:

Starting City	Ending City	Distance on Map (in Inches)
Indianapolis, IN		
	Indianapolis, IN	

Step 4: Use the scale on the map to write a ratio of distance on map to distance in reality.
Your ratio should be written as a fraction. Be sure to include units.

Ratio_____

Step 5: Calculate the distance of each leg of your trip using the ratio you just found. Set up a proportion and cross multiply to find the distance in real life between each of the cities.
ROUND TO THE NEAREST MILE.

List 2 Cities and Distance in Inches	Show Work (set up proportion and solve)	Distance in Miles

Step 6: Find the total distance traveled during your road trip.

Total Distance_____

Your family has decided to rent a vehicle for your road trip. You have 5 choices.

	2015 Ford Mustang	2015 Smart Car	2015 BMW Concept	Batmobile	1998 Honda Accord
Cost to Drive 25 Miles	$4.14	$2.62	$6.35	$10.64	$3.80
Fuel to Drive 25 Miles	1.09 gallons	0.69 gallons	1.67 gallons	2.8 gallons	1 gallon
Cost to Rent excluding fuel	$30 dollars/day plus 30 cents/mile	$30 dollars/day plus 30 cents/mile	$50 dollars/day plus 30 cents/mile	$80 dollars/day plus 30 cents/mile	$20 dollars/day plus 30 cents/mile

Step 7: Using a proportion, calculate how much fuel would cost fuel to drive each vehicle during your trip. DO NOT USE THE LAST ROW IN THIS STEP! Only use the top two rows in the table above.

Vehicle	Show Your Work	Total Cost

Step 8: Write a paragraph describing which vehicle you would rent and why. Describe how you used algebra to help make this decision.

_____

_____

_____

Step 9: How many days will you spend in each city? What will you do?

	Length in Days	Activities
City 1:		
City 2:		
City 3:		
City 4:		
City 5:		

Step 10: You can travel 800 miles per day. Find the number of days you will spend driving from city to city. Use a proportion! This does not include the time you will spend sightseeing.

Days Spent Driving _____   **Total Length of Vacation (in days) _____**

Step 11: You will need a hotel room for each day of your vacation except the last. Fill in the table showing the number of nights you will spend in each type of hotel and the amount spent

Hotel Rating	Cost per night
★	$45
★★	$55
★★★	$75
★★★★	$200
★★★★★	$300

Hotel Rating	Number of nights	Cost per night	Total Cost

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Total $ Spent on Hotels _____

Step 12: For each day you spend driving, you will eat 3 meals. You may choose where you eat your meals.

Fast Food Restaurant	$5.50
Chain Restaurant	$10.00
Fancy Restaurant	$25.00

Total Days of Vacation _____ X 3 Meals per Day = _____ Meals

Type of Restaurant	Number of Meals	Cost per Meal	Total Cost

Total $ Spent on Food _____

Step 13: Depending on the car you chose, your rental car has a fixed cost per day plus 30 cents per mile. Set up and solve an equation to find the cost for renting the vehicle for the entire trip.*(page 3 column 3)*

Equation_____   **Total $Spent on Rental Car _____**

TOTAL COST OF TRIP

FUEL (Page 3)	
RENTAL CAR (Step 13)	
HOTEL (Step 11)	
FOOD (Step 12)	

TOTAL COST OF YOUR ROAD TRIP   _____

MAJOR U.S. CITIES

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