Task #1: - Direction:

Valencia has a baby-sitting job that pays her $9.00 an hour, plus an extra $15 if she shows up early. Write the linear equation and create a table of data to show how much money she will earn if she works 11, 13, 15, 17, 19 hours. Create a graph to show the data from the table.

Write the ratio 20 students to 5 computers as a unit rate. Create a table to show how many computers 32 students will have. Hint: Use unit rate.

Students		20	32		48
Computers		5		9	

a. Determine whether the ratio of students to computers is in proportional relationship, explain how you know!

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b. What is the constant of proportionality? (Unit rate)

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c. Write the equation to represent the information in the table.

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<u>Task #2</u> Proportional Relationships & Constant of proportionality

Luz earns $400 for 40 hours of work. Create a ratio table to determine how much she earns for 6 hours of work.

Money Earned		$400			
Hours		40	45	50	55

a. Determine whether the ratio of **money earned** to **hours worked** is in **proportional relationship**, explain how you know!

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b. What is the constant of proportionality? **(Hint Unit Rate)**

   _____

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c. Write an **equation** to represent the information in the table. ($y = mx$).

   _____

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<u>Task #3</u> Tax ~ Percent ~ Discount

In New York, state sales tax rates vary by county. In Bronx County, the sales tax rate is $8\frac{1}{2}$ %.

a. A book costs $12.99, and a video game costs $39.99. Rounded to the nearest cent, how much more is the tax on the video game than the tax on the book?

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_____

b. Using n to represent the cost of an item in dollars before tax and t to represent the amount of sales tax in dollars for that item, write an equation to show the relationship between n and t.

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c. Using your equation, create a table that includes five possible pairs of solutions to the equation. Label each column appropriately.

Equations in the form $y = mx$

d. Graph the relationship from parts (b) and (c) in the coordinate plane. Include a title and appropriate scales and labels for both axes.

e. Is the relationship proportional? Why or why not? If so, what is the constant of proportionality? Explain.

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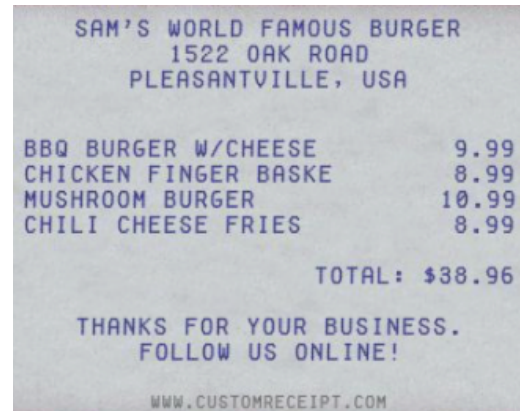
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Task 4: Tax, Tip, Percent, & Commission

1. Kara works at a fine jewelry store and earns commission on her total sales for the week. Her weekly paycheck was in the amount of $6,500, including her salary of $1,000. Her sales for the week totaled $45,000. Express her rate of commission as a percent, rounded to the nearest whole number.

    _____

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Task 4: Tax, & Tips

1. Kacey and her three friends went out for lunch, and they wanted to leave a 15% tip. The receipt shown below lists the lunch total before tax and tip. The tip is on the cost of the food plus tax. The sales tax rate in Co-Op-Ville is 8.75%.

    a. Use mental math to estimate the approximate total cost of the bill including tax and tip to the nearest dollar. Explain how you arrived at your answer.

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SAM'S WORLD FAMOUS BURGER
       1522 OAK ROAD
    PLEASANTVILLE, USA


BBQ BURGER W/CHEESE             9.99
CHICKEN FINGER BASKE           8.99
MUSHROOM BURGER               10.99
CHILI CHEESE FRIES             8.99

                 TOTAL: $38.96

   THANKS FOR YOUR BUSINESS.
      FOLLOW US ONLINE!

      WWW.CUSTOMRECEIPT.COM
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    b. Find the actual total of the bill including tax and tip. If Kacey and her three friends split the bill equally, how much will each person pay including tax and tip? Show all work!

Task 5: Discount

1. Gotay's Tees is having a Back to School *sale* where all t-shirts are discounted by 15%. Josh wants to buy five shirts: one costs $9.99; two cost $11.99 each, and two others cost $21.00 each.

    • What is the total cost of the shirts including the discount?

    • By law, sales tax is calculated on the discounted price of the shirts. Would the total cost of the shirts including the 6.5% sales tax be greater if the tax was applied before a 15% discount is taken, rather than after a 15% discount is taken? Explain.

    • Joshua remembered he had a coupon in his pocket that would take an additional 30% off the price of the shirts. Calculate the new total cost of the shirts including the sales tax.

    • If the price of each shirt is 120% of the wholesale price, write an equation and find the wholesale price for a $21 shirt.

Task 7: Linear Equations

1. Shakayla, Ba, and Karis wrote equations to calculate the amount of money in a savings account after one year with $\frac{1}{2}$% interest paid annually on a balance of M dollars. Let T represent the total amount of money saved.

Shakayla's Equation:	T = 1.05M
Ba's Equations:	T = M + 0.005M
Karis's Equations:	T = M (1+0.005)

    a. The three students decided to see if their equations would give the same answer by using a $100 balance. Find the total amount of money in the savings account using each student's equation. Show your work.

    b. Explain why their equations will or will not give the same answer.