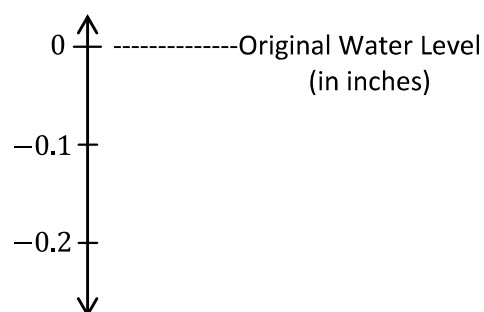


Name _____

Date _____

1. The water level in Ricky Lake changes at an average of $-\frac{7}{16}$ inch every 3 years.

- a. Based on the rate above, how much will the water level change after one year? Show your calculations and model your answer on the vertical number line, using 0 as the original water level.



- b. How much would the water level change over a 7-year period?
- c. When written in decimal form, is your answer to part (b) a repeating decimal or a terminating decimal? Justify your answer using long division.

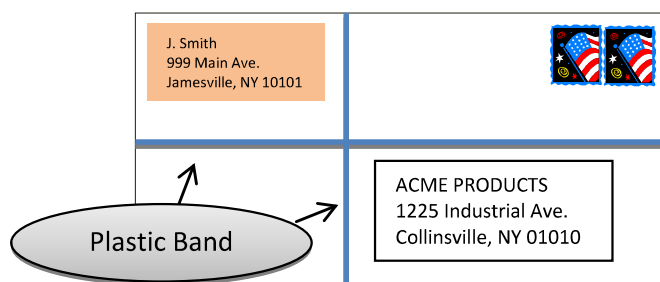
2. Kay's mother taught her how to make handmade ornaments to sell at a craft fair. Kay rented a table at the fair for \$30 and set up her work station. Each ornament that she makes costs approximately \$2.50 for materials. She sells each ornament for \$6.00.
- a. If x represents the quantity of ornaments sold at the craft fair, which of the following expressions would represent Kay's profit? (Circle *all* choices that apply.)
- A. $-30 + 6x - 2.50x$
 - B. $6x - 30 - 2.50x$
 - C. $6x - 30$
 - D. $4.50x - 30$
 - E. $3.50x - 30$
- b. Kay does not want to lose money on her business. Her mother told her she needs to sell enough ornaments to at least cover her expenses (costs for materials and table rental). Kay figures that if she sells 8 ornaments, she covers her expenses and does not lose any money. Do you agree? Explain and show work to support your answer.
- c. Kay feels that if she earns a profit of \$40.00 at this craft fair, her business will be successful enough to attend other craft fairs. How many ornaments does she have to sell to earn a \$40.00 profit? Write and solve an equation; then explain how the steps and operations used in your algebraic solution compare to an arithmetic solution.

3. Travis received a letter from his bank saying that his checking account balance fell below zero. His account transaction log is shown below.

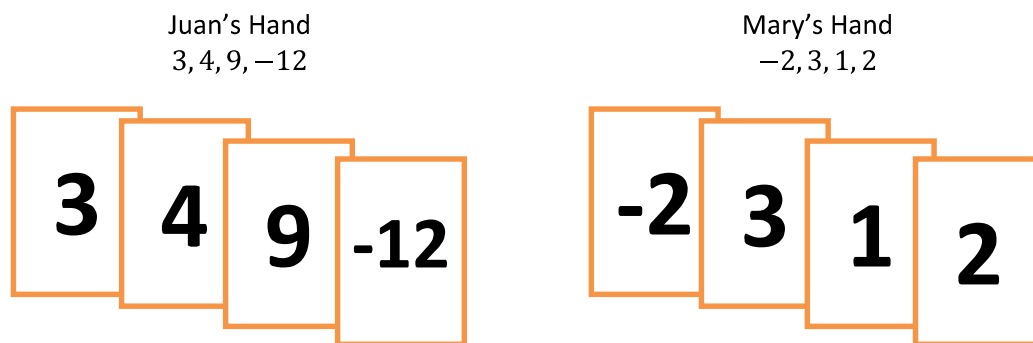
CHECK NO.	DATE	DESCRIPTION OF TRANSACTION	PAYMENT	DEPOSIT	BALANCE	
---	10/17	Beginning Balance	---	---	\$367.50	
1125	10/18	CBC Audio (Headphones)	\$62.00		-62.00	
					\$305.50	Line 1
1126	10/22	NY Sport (Basketball Shoes)	\$87.00		-87.00	
					\$218.50	Line 2
Debit	10/25	Gary's Country Market	\$38.50		-38.50	
					\$180.00	Line 3
1127	10/25	Iggy's Skate Shop (Skateboard)	\$188.00		-188.00	
					\$8.00	Line 4
	10/25	Cash Deposit (Birthday Money)		\$20.00	+20.00	
					\$28.00	Line 5
Debit	10/30	McDonuts	\$5.95		-5.95	
					\$22.05	Line 6

- a. On which line did Travis make a mathematical error? Explain Travis' mistake.
- b. The bank charged Travis a \$20 fee because his balance dropped below \$0. He knows that he currently has an outstanding charge for \$7.85 that he has not recorded yet. How much money will Travis have to deposit into his account so that the outstanding charge does not create another bank fee? Explain.

4. The length of a rectangular envelope is $2\frac{1}{2}$ times its width. A plastic band surrounds the front and back of the envelope to secure it as shown in the picture. The plastic band is $39\frac{3}{8}$ inches long. Find the length and width of the envelope.



5. Juan and Mary are playing the integer card game. The cards in their hands are shown below:



- a. What are the scores in each of their hands?

Juan's score:

Mary's score:

- b. Lydia says that if Juan and Mary both take away their 3s, Juan's score will be higher than Mary's. Marcus argues and says that Juan and Mary's scores will be equal. Are either of them right? Explain.

- c. Juan picks up another set of cards that is exactly like each card in his hand. Which of the following would make Mary's score equal to Juan's? Place a check mark ✓ by all that apply.

_____ Double every card in her hand

_____ Take away her 3 and 1

_____ Pick up a 4

_____ Take away her 2 and add -2

_____ Pick up a 7 and -3

_____ Pick up one of each of Juan's cards

Explain why your selections will make Juan and Mary's scores equal.