

Name _____

Date _____

Investments—Performing Operations with Rational

Numbers

- Using the incomplete register below, work forward and backward to determine the beginning and ending balances after the series of transactions listed.

DATE	DESCRIPTION OF TRANSACTION	PAYMENT	DEPOSIT	BALANCE
	Beginning Balance	---	---	
1/31/12	Paycheck		350.55	
2/1/12	Gillian's Chocolate Factory (Candy)	32.40		685.26
2/4/12	Main Street Jeweler's	425.30		
2/14/12	Saratoga Steakhouse	125.31		

- Write an expression to represent the balance after the paycheck was deposited on 1/31/12. Let x represent the beginning balance.

- Write a numerical expression to represent the balance after the transaction for Main Street Jeweler's was made.

1. You are planning a fundraiser for your student council. The fundraiser is a Glow in the Dark Dance. Solve each entry below and complete the transaction log to determine the ending balance in the student account.
 - a. The cost of admission to the dance is \$7 per person. Write an expression to represent the total amount of money collected for admission. Evaluate the expression if 250 people attended the dance.
 - b. The following expenses were necessary for the dance, and checks were written to each company.
 - DJ for the dance – “Music Madness DJ” costs \$200
 - Glow Sticks for “Glow World Inc.” for the first 100 entrants. Cost of glow sticks were \$0.75 each plus 8% sales tax.

Complete the transaction log below based on this information

DATE	DESCRIPTION OF TRANSACTION	PAYMENT	DEPOSIT	BALANCE
	Beginning Balance	---	---	1,243.56

- c. Write a numerical expression to determine the cost of the glow sticks.

Analyze the results.

- d. Write an algebraic expression to represent the profit earned from the fundraiser. (Profit is the amount of money collected in admissions minus all expenses.)
- e. Evaluate the expression to determine the profit if 250 people attended the dance. Use the variable p to represent the number of people attending the dance (from part (a)).
- f. Using the transaction log above, what was the amount of the profit earned?

2. The register below shows a series of transactions made to an investment account. Vinnie and Anthony both completed the register in hopes of finding the beginning balance. As you can see, they do not get the same answer. Who was correct? What mistake did the other person make? What was the monthly gain or loss?

Original Register

DATE	DESCRIPTION OF TRANSACTION	PAYMENT	DEPOSIT	BALANCE
	Beginning Balance	---	---	
3/1/11	Broker's Fee	250.00		
3/10/11	Loan Withdrawal	895.22		
3/15/11	Refund – Misc. Fee		50.00	
3/31/11	Investment Results		2,012.22	18,917.00

Vinnie's Work

DATE	DESCRIPTION OF TRANSACTION	PAYMENT	DEPOSIT	BALANCE
	Beginning Balance	---	---	18,000.00
3/1/11	Broker's Fee	250.00		17,750.00
3/10/11	Loan Withdrawal	895.22		16,854.78
3/15/11	Refund – Misc. Fee		50.00	16,904.78
3/31/11	Investment Results		2,012.22	18,917.00

Anthony's Work

DATE	DESCRIPTION OF TRANSACTION	PAYMENT	DEPOSIT	BALANCE
	Beginning Balance	---	---	19,834.00
3/1/11	Broker's Fee	250.00		20,084.00
3/10/11	Loan Withdrawal	895.22		20,979.22
3/15/11	Refund – Misc. Fee		50.00	20,929.22
3/31/11	Investment Results		2,012.22	18,917.00

1. Using the incomplete register below, work forwards and backwards to determine the beginning and ending balances after the series of transactions listed.

DATE	DESCRIPTION OF TRANSACTION	PAYMENT	DEPOSIT	BALANCE
	Beginning Balance	---	---	367.11
1/31/12	Paycheck		350.55	717.66
2/1/12	Gillian's Chocolate Factory (Candy)	32.40		685.26
2/4/12	Main Street Jeweler's	425.30		259.96
2/14/12	Saratoga Steakhouse	125.31		134.65

2. Write an expression to represent the balance after the paycheck was deposited on 1/31/12. Let x represent the beginning balance.

$$x + 350.55$$

3. Write a numerical expression to represent the balance after the transaction for Main Street Jeweler's was made.

$$685.26 - 425.30$$

1. You are planning a fundraiser for your student council. The fundraiser is a Glow in the Dark Dance. Solve each entry below and complete the transaction log to determine the ending balance in the student account.

- a. The cost of admission to the dance is \$7 per person. Write an expression to represent the total amount of money collected for admission. Evaluate the expression if 250 people attended the dance.

p = number of people attending dance

$$7p$$

$$7(250) = 1,750$$

- b. The following expenses were necessary for the dance, and checks were written to each company.

- DJ for the dance – "Music Madness DJ" costs \$200
- Glow Sticks for "Glow World Inc." for the first 100 entrants. Cost of glow sticks were \$0.75 each plus 8% sales tax.

Complete the transaction log below based on this information

DATE	DESCRIPTION OF TRANSACTION	PAYMENT	DEPOSIT	BALANCE
	Beginning Balance	---	---	1,243.56
	Dance Admission		1,750.00	2,993.56
	DJ Music Madness	200.00		2,793.56
	Glow Sticks from Glow World	81.00		2,712.56

- c. Write a numerical expression to determine the cost of the glow sticks.

$$\frac{8}{100} \times 0.75 = 0.06$$

$$\text{cost} = 0.75 + 0.06 = 0.81 \text{ each}$$

$$100(0.81) = \$81$$

Analyze the results

- d. Write an algebraic expression to represent the profit earned from the fundraiser. (Profit is the amount of money collected in admissions minus all expenses.)

$$7p - 200 - 81$$

$$7p + (-200) + (-81)$$

$$7p + (-281) \text{ or } 7p - 281$$

- e. Evaluate the expression to determine the profit if 250 people attended the dance. Use the variable p to represent the number of people attending the dance (from part (a)).

$$7p + (-281)$$

$$7(250) + (-281)$$

$$1,750 + (-281)$$

$$1,469$$

The profit is \$1,469.

- f. Using the transaction log above, what was the amount of the profit earned?

$$2,712.56 - 1,243.56 = 1,469 \quad \text{The profit is } \$1,469.$$

2. The register below shows a series of transactions made to an investment account. Vinnie and Anthony both completed the register in hopes of finding the beginning balance. As you can see, they do not get the same answer. Who was correct? What mistake did the other person make? What was the monthly gain or loss?

Original Register

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The correct register is Vinnie's.

Anthony made the mistake of using the operations for moving forward. He added the deposits and subtracted the payments, but since he was working backward in the problem, he needed to do just the opposite.

The monthly gain was \$917. This was a gain because the ending balance was greater than the beginning balance, and the amount of the gain was calculated by $18,917 - 18,000 = 917$.