

Name: _____ Date: _____

It's a Lie!!

Percents

Julie needs a new pair of tennis shoes. She notices that "B and L" is having a sale on shoes - 40% off the original price. She sees that "Sure Feet" has the same shoes for the same original price marked down 20%. "Sure Feet" is also having an "additional 20% off" sale.

1. Julie wonders if the two markdowns at "Sure Feet" amount to the same discount as "B and L". Are they the same? Which store is offering the lowest priced shoes? Why? [Hint: Create formulas for the original two stores and use them to explain the differences.]
2. How could we change the percent discount at "B and L" to make the shoes the same price as "Sure Feet"? How could we change either one or both percent discounts at "Sure Feet" to equal the percent discount given at "B and L"?
3. Imagine you are running a shoe store of your own and the same pair of shoes at the same price are on sale. You've already marked them down 10%. How much of an additional discount would you have to give to equal the 40% that "B and L" is offering?

Thinking Cap

Is a cheaper original price at 30% off better than a higher original price at 40% off? When? Why?

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Using this Activity:

Objective: Use the calculator to investigate percents

NCTM Standards: Mathematics as Problem Solving; Mathematical Connections; Computation and Estimation; Fractions and Decimals; Algebra

Newspaper advertisements of sales make a good introduction to this activity. Students who have not worked with abstract formulas can pick a price for the shoes and use this to answer the questions. Discuss with the students what a good price might be to pick and why. discuss why it is acceptable to pick a number for the price. Discuss why each student could pick a different price to work with and would still get the same solution.

Answers :

- "B and L" price = $(.60)P$
 "Sure Feet" = $(.80(.80P)) = (.64)P$

20% discount means the consumer will pay 80% of price etc.

For an additional discount = take the 1st discount, take the new price and take the discount of that.

- To change to "Sure Feet" discount:

"B & L"	"Sure Feet"
$x = \text{new percent discount}$	$(1.00 - x)P = (.64)P$
	$x = .36 \text{ or } 36\%$

To change to "B and L" discount:

(changing "additional off")	"B & L"	"Sure Feet"
	$(.60)P$	$= ((1.00 - x) (.80))$
	$(.75)$	$= 1.00 - x$
	$-.25$	$= -x$
	$.25$	$= x$

- $(.60)P = ((100 - x) (.90)P)$
 $.3333 = x$
 33.3% or 1/3 off additional