

Problem Solving with Decimals/Percent

The ugliest jacket

Gordon's Sporting Goods had sold all its windbreaker jackets except for one. It was so ugly no one wanted to buy it. So Gordon's put the jacket on sale at one-fourth off its original price. The jacket did not sell, so Gordon's marked the sales price down one-third off. Still no one wanted to buy such an ugly jacket, so Gordon's marked the second sales price down one-half off. Finally, customer Ernie Harrison bought the jacket for his cat to sleep on. Ernie paid only \$12 for the world's ugliest jacket. What was the original price of the jacket? What did the jacket look like?

Source: Mathematics Teaching in the Middle School (2002)

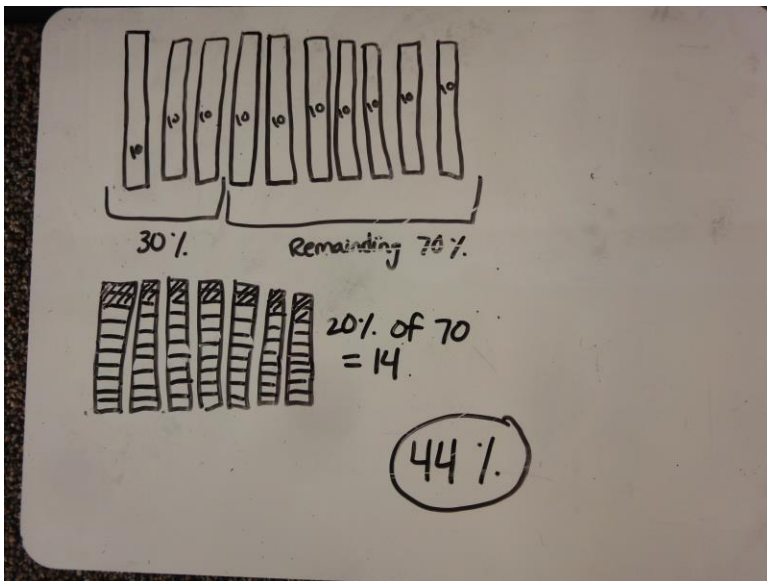
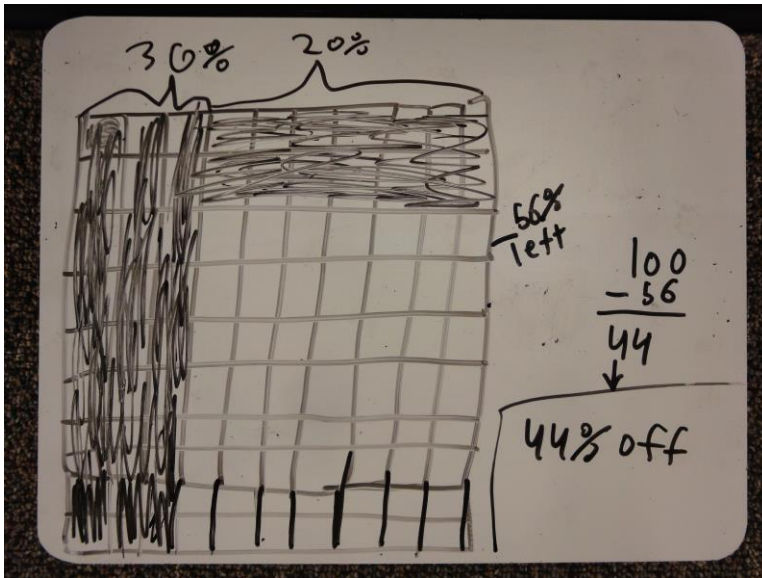
A handwritten student solution on a piece of paper. At the top, a grid is drawn with the title "original price" above it. The grid has 3 rows and 4 columns. The first three columns of each row contain the text "\$12". The fourth column of the first row is shaded with diagonal lines. The fourth column of the second row contains "\$12" and is also shaded. The third column of the third row contains "\$12" and is shaded. The second column of the third row is shaded. Below the grid, the calculation $\$12 \times 4 = \48 is written, followed by the text "original price". Below the calculation is a drawing of a jacket with a very busy, multi-colored pattern.

A handwritten student solution on a piece of paper. At the top, a horizontal bar is drawn and divided into four equal segments. The first segment on the left is labeled "\$12". The remaining three segments are shaded with diagonal lines. Below the bar, the text "original price \$48" is written. Below the text is a drawing of a jacket with a busy, multi-colored pattern.

Double discount task

Suzy is shopping at her favorite clothing store - GAP. For one-day only the GAP is offering a 30% discount and then on top of that an additional 20% discount. Suzy thinks this means she will receive a 50% discount on her purchases. Her friend Laura thinks it will be less than 50%. Construct a viable argument (using visuals where possible) to help them understand the true discount at the GAP.

Source: Hofacker (2017)



Aquarium Task

In Mariam's aquarium, there are swordtails and guppies. 25% of the fish are swordtails. Mariam then buys more swordtails and puts them into the aquarium to double their number. What percentage of the fish are guppies after she doubles the number of swordtails? **Try to model this with a tape diagram.**

Source: National Council of Teachers of Mathematics, 70th Yearbook, 2008

