



Problem of the Week

Problem B and Solution

What A Sale!

Problem

The window of a store advertises that it is holding a sale. The new salesperson puts up the sign in the window on clear plastic, so it can be seen from both sides of the glass. From inside the store it reads:

SALE. ENJOY

18

% OFF

Amanda, a very smart shopper, selects a sweater with a regular price of \$50.

- What does the store expect Amanda to pay for the sweater?
- Amanda was looking at the sign from outside the window. What does Amanda expect to pay for the sweater?
- If the store grants Amanda the discount she saw from the outside, how much more will Amanda save than the store expected her to save?



Solution

- The store expects to give a discount equal to 18% of \$50 = $0.18 \times 50 = \$9$.
So the store expects Amanda to pay $\$50 - \$9 = \$41$.
- Amanda sees the sign as 81% off. Amanda expects to get a discount equal to 81% of \$50 = $0.81 \times 50 = \$40.50$.
So Amanda expects to pay $\$50 - \$40.50 = \$9.50$
- Since $\$41 - \$9.50 = \$31.50$, Amanda would save an additional \$31.50 compared to the store's intended sale price.

