



Math Olympiad and Problem Solving Programs  
E120 - Honors Algebra Problem Solving  
Problem Set 10.2 - Percent

Name:

Date:

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1.  D
2.  E
3.  A
4.  B
5. The last bit of information is extraneous, the merchant **CLAIMS** that the final price is 50% off. What really happens is the merchant offers 30% off. Then he takes 20% off the remaining 70%, which is  $.2 \times .7 = .14$ , or 14%. The total discount is  $30 + 14 = 44\%$ , or  B
6.  B
7.  B
8. Letting  $l, w, P$  be the original length, width, and perimeter of the rectangle,  $P = 2l + 2w$ . If the length and width are each increased by 10%, the new length and width are  $1.1l$  and  $1.1w$ . The new perimeter is  $2(1.1l) + 2(1.1w) = 1.1(2l + 2w) = 1.1P$ . This means the perimeter is increased by 10%, or  B.
9. Let  $s$  be Mr. Green's salary. After his first raise, his salary is  $1.1s$ . After the second raise, his salary is  $1.1 \times 1.1s = 1.21s$ . After the third raise, his salary is  $1.1 \times 1.21s = 1.331s$ . After the fourth raise, his salary is  $1.1 \times 1.331s = 1.4641s$ , which is a 46.41% increase from his original salary.  E
10.  B