4-8 Additional Practice

1. Paul received a coupon for 43% off one item at a clothing store. Let b be the original price of the item. Use the expression $b - 0.43b$ for the new price of the item. Write an equivalent expression by combining like terms.

2. Use Structure The area of a rectangular outdoor stage has been extended on one side. The entire new area in square meters can be written as $216 + 12x$. Factor the expression to find the dimensions of the extended stage. Ⓒ MP.7

3. A teacher made a copy of a map. To make the map easier to see, the teacher enlarged the area of the map by 38%. Let d represent the area of the original map. The expression $d + 0.38d$ is one way to represent the area of the new map. Write two expressions that represent the area of the new map.

4. The manager of a store increases the price of a popular product by 5%. Let t be the original price of the product. The new price is $t + 0.05t$.

  a. Find an expression equivalent to $t + 0.05t$.

  b. If the original price was $24, what is the new price?

5. A landowner recently sold a large plot of land. The sale decreased his total acreage by 12%. Let v be the original acreage.

  a. Write two equivalent expressions that represent the new acreage.

  b. Use the expressions to describe another way to find the new acreage.

6. Ellena is considering a venue for a party. Let g represent the number of Ellena's guests. Each venue charges a booking fee plus a cost per guest. Ellena wrote the expression $(62 + 35g) - (56 + 27g)$ to represent the difference in cost of one venue over the other.

  Venue 1: $(62 + 35g)$ Venue 2: $(56 + 27g)$

  a. Write an equivalent expression to show the difference in cost.

  b. What information is included from the expression Ellena wrote compared with the equivalent expression?

7. Construct Arguments Cole orders 4 bags of salted potato chips, 3 bags of sour cream and chive potato chips, and 2 bags of barbecue potato chips. Cole finds the cost using the expression $4x + 3x + 2x$, where x is the cost of one bag of chips. Explain a more efficient way to use an expression to work out the cost. © MP.3

8. Alexander is building a rectangular pen in his backyard for his dog. The pen will have a length of 13 feet and a width of $2x$ feet. Which expression represents the total amount of fencing needed for the pen? Select all that apply.

- ☐ $2x + 13$
- ☐ $2x + 26$
- ☐ $4x + 26$
- ☐ $4x + 52$
- ☐ $2(2x + 13)$

9. Higher Order Thinking A customer at a craft store is buying a blank canvas and a set of brushes. The customer has two coupons; one coupon is valid for 35% off all canvases, and the other is valid for 20% off the entire purchase. The customer can only use one coupon. Let c represent the original price of the canvas and b represent the price of the set of brushes.

a. Write two expressions that represent the "35% off all canvases" coupon.

b. Write two expressions that represent the "20% off the entire purchase" coupon.

c. If the original cost of the canvas is $12 and the set of brushes is $16, which option would be the better choice? Explain.

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10. An art exhibit is made up of four panels that each have the same height.

PART A

Write an expression for the total area in terms of the height, h.

Panel Areas

Panel	Width (ft)
A	5.58
B	6.02
C	4.42
D	3.98

PART B

If each panel is 10 feet high, what is the total area of the exhibit? Explain your answer.