

Name: Key
 Per: _____

Date: _____
 1.4 HW

1. Use the Associative, Commutative and Distributive properties to write the expression given as an equivalent expression in simplest form.

(a) $2x+8+3x-3$
 $5x+5$

(b) $3x+(5x+2x)$
 $3x+7x$
 $10x$

(c) $(3x-4)+(2x+1)$
 $3x+2x-4+1$
 $5x-3$

(d) $6(2-3x)+1$
 $12-18x+1$
 $13-18x$

(e) $x+4-2\left(\frac{1}{2}x+3\right)$
 $x+4-x-6$
 -2

(f) $3(x+2)-2(x+1)$
 $3x+6-2x-2$
 $x+4$

(g) $\frac{12x+18}{6}$
 $2x+3$

(h) $\frac{2(5x+3)-4}{2}+1$
 $\frac{10x+6-4}{2}+1$
 $\frac{10x+2}{2}+1$
 $5x+1+1$
 $5x+2$

(i) $\frac{\frac{1}{2}(4x+8)-8}{2}$
 $\frac{2x+4-8}{2}$
 $\frac{2x-4}{2}$
 $x-2$

2. Factor each of the following by using the distributive property.

(a) $14x+21$ GCF = 7
 $7(2x+3)$

(b) $6-3x$ GCF: 3
 $3(2-x)$

(c) $(2x+4)+(3x-14)$ Simplify first then G.C.F.
 $5x-10$
 $5(x-2)$

3. Four friends have an assortment of Snack bars that cost S dollars each, Munch bars that cost M dollars each and Chewies that cost C dollars each that they sell to raise money for a trip they are taking. They decide to split the money from the sales evenly between the four friends. They create an expression to make sure everyone gets the same amount. The amount each friend receives is given by the complicated expression

$$\frac{(5C + 5S) + (2M + 4S) + (10C + M) + (C + 3S + M)}{4}$$

- (a) Write an equivalent expression that simplifies the amount that each friend will earn in terms of the unit costs S , M , and C .
 (b) If Snack bars cost \$3 each, Munch bars cost \$5 each and Chewies cost \$4.50 each, then how much does each friend earn?

$$\frac{12S + 16C + 4M}{4}$$

$$3S + 4C + M$$

$$\begin{aligned} 3(3) + 4(4.50) + 5 \\ = 9 + 18 + 5 \\ = \$32 \end{aligned}$$

4. Taylor is factoring the following expression but notices she got the wrong answer when checking her work. Identify what she did wrong and show her the appropriate way to factor.

Taylor's work:

$$12x + 3 = 3(4x)$$

Taylor's Check:

$$3(4x) = 12x$$

Your work:

$$\begin{aligned} 12x + 3 \quad \text{GCF: } 3 \\ 3(4x + 1) \end{aligned}$$

Your check:

$$\begin{aligned} 3(4x + 1) \\ 12x + 3 \checkmark \end{aligned}$$