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**Unit 6, Lesson 21****Practice Problems**

1. • Noah says that  $9x - 2x + 4x$  is equivalent to  $3x$ , because the subtraction sign tells us to subtract everything that comes after  $9x$ .
- Elena says that  $9x - 2x + 4x$  is equivalent to  $11x$ , because the subtraction only applies to  $2x$ .

Do you agree with either of them? Explain your reasoning.

2. Identify the error in generating an expression equivalent to  $4 + 2x - \frac{1}{2}(10 - 4x)$ . Then correct the error.

$$4 + 2x + \frac{-1}{2}(10 + -4x)$$

$$4 + 2x + -5 + 2x$$

$$4 + 2x - 5 + 2x$$

$$-1$$

3. Select **all** expressions that are equivalent to  $5x - 15 - 20x + 10$ .

A.  $5x - (15 + 20x) + 10$

B.  $5x + -15 + -20x + 10$

C.  $5(x - 3 - 4x + 2)$

D.  $-5(-x + 3 + 4x + -2)$

E.  $-15x - 5$

F.  $-5(3x + 1)$

4. The school marching band has a budget of up to \$750 to cover 15 new uniforms and competition fees that total \$300. How much can they spend for one uniform?
- a. Write an inequality to represent this situation.
- b. Solve the inequality and describe what it means in the situation.



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5. Solve the inequality that represents each story. Then interpret what the solution means in the story.
- a. For every \$9 that Elena earns, she gives  $x$  dollars to charity. This happens 7 times this month. Elena wants to be sure she keeps at least \$42 from this month's earnings.  $7(9 - x) \geq 42$
- b. Lin buys a candle that is 9 inches tall and burns down  $x$  inches per minute. She wants to let the candle burn for 7 minutes until it is less than 6 inches tall.  
 $9 - 7x < 6$
6. A certain shade of blue paint is made by mixing  $1\frac{1}{2}$  quarts of blue paint with 5 quarts of white paint. If you need a total of 16.25 gallons of this shade of blue paint, how much of each color should you mix?