## Unit 6 Lesson 18: Subtraction in Equivalent Expressions

### 1 Number Talk: Additive Inverses (Warm up)

#### Student Task Statement

Find each sum or difference mentally.

$-30+-10$

$-10+-30$

$-30−10$

$10−-30$

### 2 A Helpful Observation

#### Student Task Statement

Lin and Kiran are trying to calculate $7\frac{3}{4}+3\frac{5}{6}−1\frac{3}{4}$. Here is their conversation:

Lin: “I plan to first add $7\frac{3}{4}$ and $3\frac{5}{6}$, so I will have to start by finding equivalent fractions with a common denominator.”

Kiran: “It would be a lot easier if we could start by working with the $1\frac{3}{4}$ and $7\frac{3}{4}$. Can we rewrite it like $7\frac{3}{4}+1\frac{3}{4}−3\frac{5}{6}$?”

Lin: “You can’t switch the order of numbers in a subtraction problem like you can with addition; $2−3$ is not equal to $3−2$.”

Kiran: “That’s true, but do you remember what we learned about rewriting subtraction expressions using addition? $2−3$ is equal to $2+(-3)$.”

1. Write an expression that is equivalent to $7\frac{3}{4}+3\frac{5}{6}−1\frac{3}{4}$ that uses addition instead of subtraction.
2. If you wrote the **terms** of your new expression in a different order, would it still be equivalent? Explain your reasoning.

### 3 Organizing Work

#### Images for Launch





#### Student Task Statement

1. Write two expressions for the area of the big rectangle.
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1. Use the distributive property to write an expression that is equivalent to $\frac{1}{2}(8y+-x+-12)$. The boxes can help you organize your work.
* 
1. Use the distributive property to write an expression that is equivalent to $\frac{1}{2}(8y−x−12)$.

#### Activity Synthesis





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