Unit 6 Lesson 3: Reasoning about Equations with Tape Diagrams

1 Find Equivalent Expressions (Warm up)

Student Task Statement

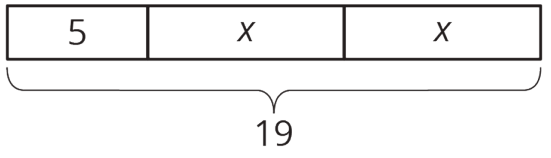
Select **all** the expressions that are **equivalent** to $7(2 - 3n)$. Explain how you know each expression you select is equivalent.

1. $9 - 10n$
2. $14 - 3n$
3. $14 - 21n$
4. $(2 - 3n) \cdot 7$
5. $7 \cdot 2 \cdot (-3n)$

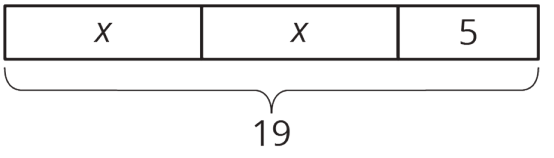
2 Matching Equations to Tape Diagrams

Student Task Statement

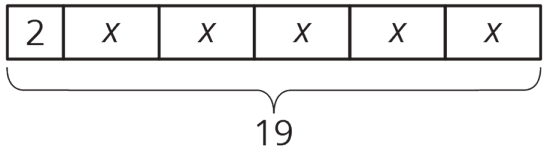
A



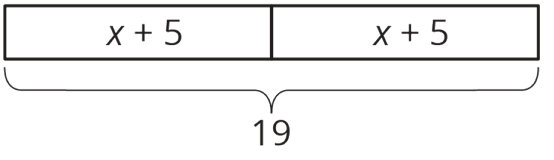
B



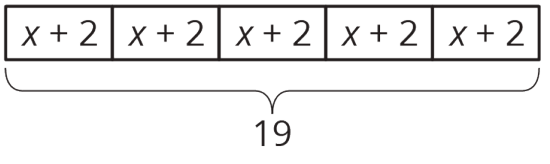
C



D



E



1. Match each equation to one of the tape diagrams. Be prepared to explain how the equation matches the diagram.

2. Sort the equations into categories of your choosing. Explain the criteria for each category.

- $2x + 5 = 19$
- $2 + 5x = 19$
- $2(x + 5) = 19$
- $5(x + 2) = 19$
- $19 = 5 + 2x$
- $(x + 5) \cdot 2 = 19$
- $19 = (x + 2) \cdot 5$
- $19 \div 2 = x + 5$
- $19 - 2 = 5x$

3 Drawing Tape Diagrams to Represent Equations

Student Task Statement

- $114 = 3x + 18$
- $114 = 3(y + 18)$

1. Draw a tape diagram to match each equation.
2. Use any method to find values for x and y that make the equations true.