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Unit 6, Lesson 4: Reasoning about Equations and Tape Diagrams (Part 1)

1. Draw a square with side length 7 cm.

- Predict the perimeter and the length of the diagonal of the square.
- Measure the perimeter and the length of the diagonal of the square.
- Describe how close the predictions and measurements are.

(from Unit 3, Lesson 1)

2. Find the products.

- $(100) \cdot (-0.09)$
- $(-7) \cdot (-1.1)$
- $(-7.3) \cdot (5)$
- $(-0.2) \cdot (-0.3)$

(from Unit 5, Lesson 9)

3. Here are three stories:

- A family buys 6 tickets to a show. They also pay a \$3 parking fee. They spend \$27 to see the show.
- Diego has 27 ounces of juice. He pours equal amounts for each of his 3 friends and has 6 ounces left for himself.
- Jada works for 6 hours preparing for the art fair. She spends 3 hours on a sculpture and then paints 27 picture frames.

Here are three equations:

- $3x + 6 = 27$
- $6x + 3 = 27$
- $27x + 3 = 6$

- Decide which equation represents each story. What does x represent in each equation?

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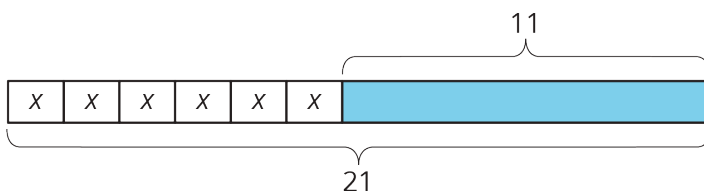
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b. Find the solution to each equation. Explain or show your reasoning.

c. What does each solution tell you about its situation?

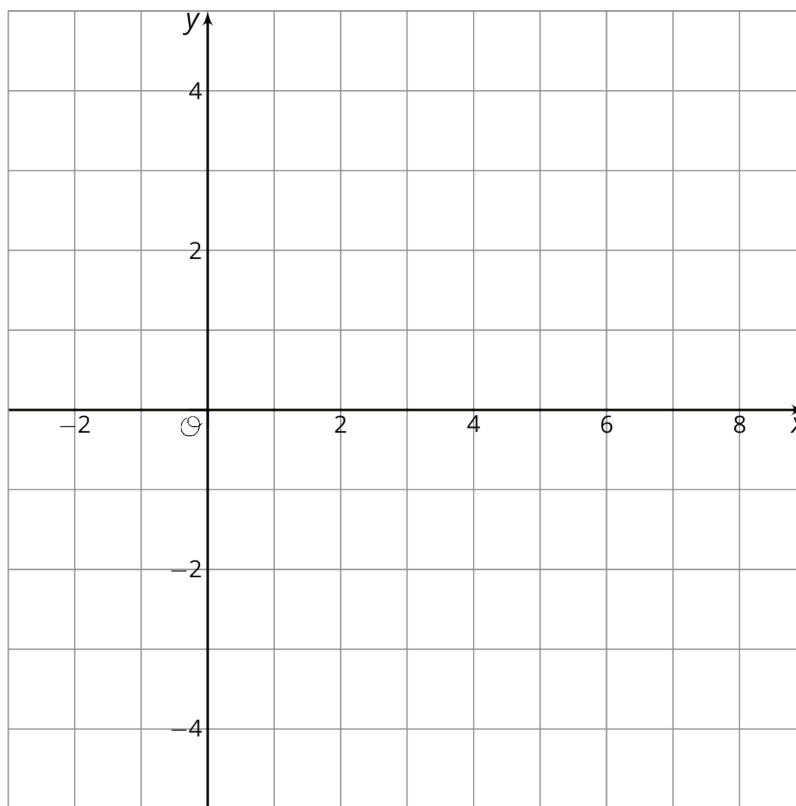
4. Here is a diagram and its corresponding equation. Find the solution to the equation and explain your reasoning.



$$6x + 11 = 21$$

5. a. Plot these points on the coordinate plane:

$$A = (3, 2), B = (7.5, 2), C = (7.5, -2.5), D = (3, -2)$$



b. What is the vertical difference between D and A ?

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c. Write an expression that represents the vertical distance between B and C .

(from Unit 5, Lesson 7)