

Unit 6, Lesson 1: Tape Diagrams and Equations

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1. Here is an equation: $x + 4 = 17$

a. Draw a tape diagram to represent the equation.



b. Which part of the diagram shows the quantity x ? What about 4? What about 17?

↓
smaller box

↓
larger box

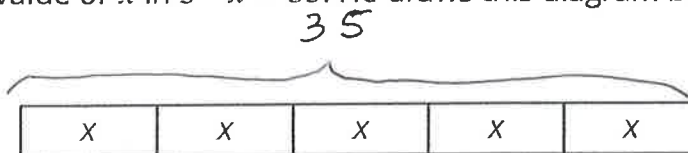
⏟

c. How does the diagram show that $x + 4$ has the same value as 17?

The brackets go the whole length of the x and the 4.

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2. Diego is trying to find the value of x in $5 \cdot x = 35$. He draws this diagram but is not certain how to proceed.



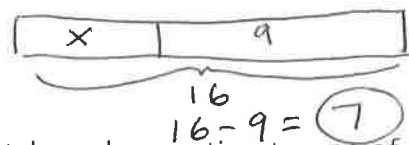
a. Complete the tape diagram so it represents the equation $5 \cdot x = 35$.

b. Find the value of x . $x = 7$ $35 \div 5 = x$
↑
pieces

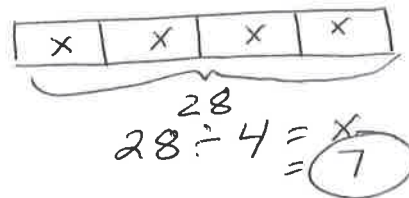
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3. For each equation, draw a tape diagram and find the unknown value.

a. $x + 9 = 16$



b. $4 \cdot x = 28$



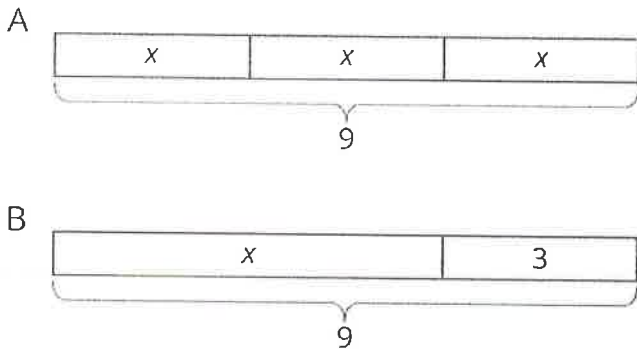
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4. Match each equation to one of the two tape diagrams.

NAME

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PERIOD



- a. $x + 3 = 9$ B
- b. $3 \cdot x = 9$ A
- c. $9 = 3 \cdot x$ A
- d. $3 + x = 9$ B
- e. $x = 9 - 3$ B
- f. $x = 9 \div 3$ A
- g. $x + x + x = 9$ A

5. A shopper paid \$2.52 for 4.5 pounds of potatoes, \$7.75 for 2.5 pounds of broccoli, and \$2.45 for 2.5 pounds of pears. What is the unit price of each item she bought? Show your reasoning.

$$\begin{array}{r} \$2.52 \\ \hline 4.5 \text{ pounds} \\ \hline \end{array}$$

.56 per pound

$$\begin{array}{r} \$7.75 \\ \hline 2.5 \text{ pounds} \\ \hline \end{array}$$

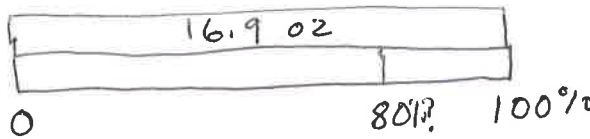
\$3.10 per pound

$$\begin{array}{r} \$2.45 \\ \hline 2.5 \text{ pounds} \\ \hline \end{array}$$

.98 per pound

(from Unit 5, Lesson 13)

6. A sports drink bottle contains 16.9 fluid ounces. Andre drank 80% of the bottle. How many fluid ounces did Andre drink? Show your reasoning.



.80

think each 10% = 1.69
so 80% = 8(1.69)

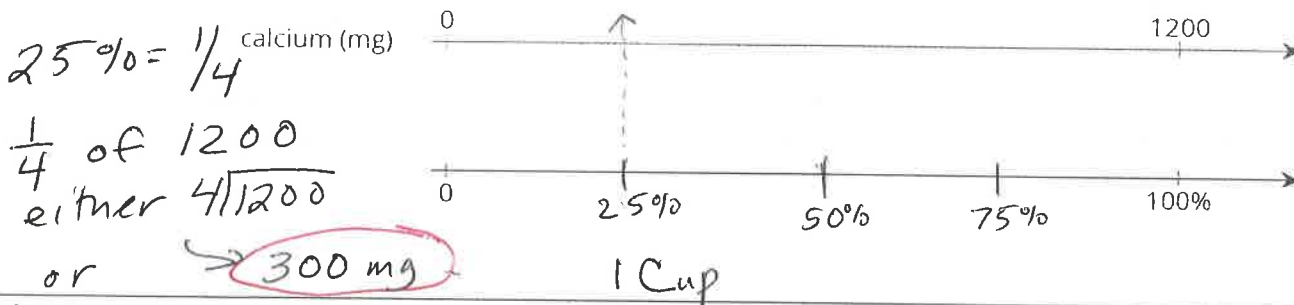
13.52

(from Unit 3, Lesson 14)

OR

$$\begin{array}{r} 16.9 \\ \times 8 \\ \hline 13.52 \end{array}$$

7. The daily recommended allowance of calcium for a sixth grader is 1,200 mg. One cup of milk has 25% of the recommended daily allowance of calcium. How many milligrams of calcium are in a cup of milk? If you get stuck, consider using the double number line.



↑

$$\begin{array}{r} 1200 \\ \times .25 \\ \hline 300.00 \end{array}$$