Quick Translate the problem to an algebraic equation and solve.

Check 2.5.23

An 83-inch length of ribbon is to be cut into three pieces. The longest piece is to be 22 inches longer than the shortest piece, and the third piece is to be half the length of the longest piece. Find the length of each piece of ribbon.

The length of the shortest piece of ribbon is inches.

The length of the longest piece of ribbon is inches.

The length of the third piece of ribbon is inches.

< 83 inches 3 pieces add to 83 Basic 83 Equation: Longest piece is 22" longer than shortest Translate: Longest = 22 + (shortest) + 3rd is half the length of the longest Translate: 3rd = 1 (longest) If we choose x = shortest Then longest = 22+x and 3rd = ± (longest) means  $3rd = \pm (22+X)$ 

Fill in the boxes  $x + 22+x + \frac{1}{2}(22+x) = 83$ shortest longest 3rd

Solve equation  $x + 22 + x + \frac{1}{2}(22 + x) = 83$ Hint: distribute  $\frac{1}{2}$  and combine like terms.

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