Fraction pie task

a) What fraction of the circle is part B?
b) What fraction of the circle is part D?

Adapted from Clarke, Roche, & Mitchel, 2007

- Note: To be successful in this task, the student should understand that the parts into which the whole is divided must be of equal size.
Example: Ratio Subconstruct

John and Mary are preparing orange juice for their party. Presented below are the recipes they used. What recipe will make the juice the most “orangey”?

John’s recipe:
three cups of concentrate juice-five cups of water.

Mary’s recipe:
four cups of concentrate juice-eight cups of water.

(Adapted from Charalambous and Pitta-Pantazi, 2007)
Example: *Operator Subconstruct*

- Troy has $1 \frac{2}{5}$ as many baseball cards as I have. I have 55 cards. How many does Troy have?

- I canned 40 pounds of tomatoes last year. Maria canned $\frac{3}{8}$ as many. How many pounds did Jan can?

(Adapted from Lamon, 2006)
Example: *Quotient* Subconstruct

- Three pizzas were shared equally between five girls. How much does each girl get?

(Adapted from Clarke, Roche, and Mitchell, 2007)

- Note: Clarke, et al. found that 11.8% of students were unable to correctly solve the task. They suggest more exposure to this kind of problem and propose connecting division with fractions to help students to make the generalization that $a ÷ b = a/b$. 
Example: Measure Subconstruct

1. Locate number one on each of the following number lines.

2. Name one fraction that appears between $1/8$ and $1/9$.  
   (Adapted from Charalambous and Pitta-Pantazi, 2007).