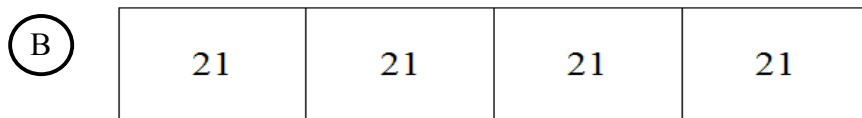
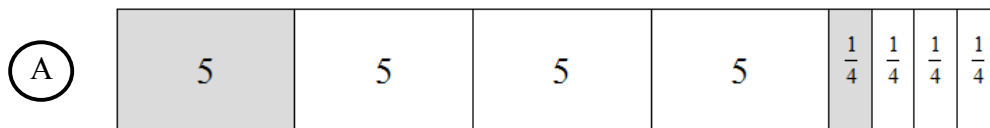


If 4 people share a 21 foot length of ribbon equally, how long is each piece? Which responses below are possible solutions?



(C)
$$\frac{21}{4}$$

$$= \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{1}{4}$$

(D)
$$\begin{array}{r} 5.25 \\ 4 \overline{)21.00} \\ \underline{-20} \\ 10 \\ \underline{-8} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

(E)
$$\begin{array}{r} 0.19 \\ 21 \overline{)4.00} \\ \underline{-21} \\ 190 \\ \underline{-188} \\ 2 \end{array}$$

Scoring:

- 2 points: Selected A, C and D with no incorrect response
 1 point: Selected any two of A, C and D and no incorrect response
 0 points: Any other combinations of choices

Key and Distractor Analysis:

- A. Key:** Bar model of 21 in 4 equal groups
- B.** Bar model of 21 multiplied by 4 instead of 21 divided by 4.
- C. Key:** Decomposed fractions correctly
- D. Key:** Correct use of traditional algorithm
- E.** Divided 4 by 21 instead of 21 by 4

Number and Operations — Fractions**5.NF**

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions, mixed numbers, **or decimal fractions**, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50- pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*