

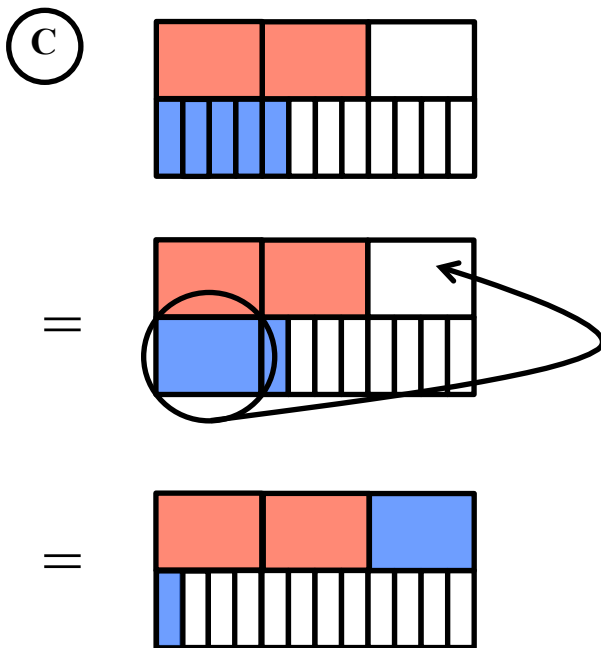
Which of these methods would be appropriate for finding  $\frac{2}{3} + \frac{5}{12}$  ?

(A) 
$$\frac{2}{3} + \frac{5}{12}$$
$$= \frac{2+5}{3+12}$$

(D) 
$$\frac{2}{3} + \frac{5}{12}$$
$$= \frac{2}{3}(4) + \frac{5}{12}$$
$$= \frac{2}{12} + \frac{5}{12}$$
$$= \frac{2+5}{12}$$

(E) 
$$\frac{2}{3} + \frac{5}{12}$$
$$= \frac{1}{3} + \frac{1}{3} + \frac{5}{12}$$
$$= \frac{4}{12} + \frac{4}{12} + \frac{5}{12}$$
$$= \frac{4+4+5}{12}$$

(B) 
$$\frac{2}{3} + \frac{5}{12}$$
$$= \frac{2}{3}\left(\frac{4}{4}\right) + \frac{5}{12}$$
$$= \frac{8}{12} + \frac{5}{12}$$
$$= \frac{8+5}{12}$$

**Scoring:**

2 points: If selected B, C, and E

1 point: If selected any two of B, C, and E

0 points: All other combination of choices

**Key and Distractor Analysis:**

- A. Students added the numerators and added the denominators. (“Added across”)
- B. Key. Correctly shows one way to create like denominators and add fractions.
- C. Key. Correctly shows one way to model the sum on a bar model
- D. Students only multiplied the denominator by 4, which created a common denominator but not an equivalent fraction.
- E. Key. Correctly shows one way to decompose fractions into fractions with like denominators and then add.

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

**Use equivalent fractions as a strategy to add and subtract fractions.**

1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example,  $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$ .* (In general,  $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$ .)