

If 72 people attend a concert and  $\frac{3}{8}$  of them are students, how many students attend the concert?

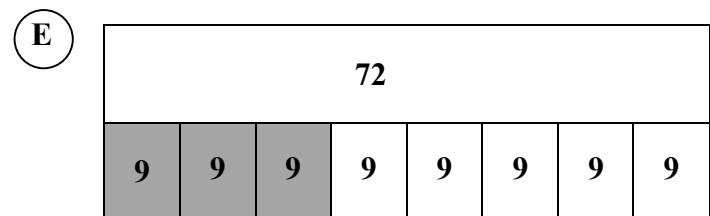
Which of these methods could be used to find the correct answer?

(A)  $\frac{3}{8} \times 72$   
 $= 3 \times 72 \div 8$   
 $= 216 \div 8$

(D)  $\frac{3}{8} \times 72$   
 $= \frac{3 \cdot 72}{8}$   
 $= \frac{3 \cdot 8 \cdot 9}{8}$   
 $= 3 \cdot 9$

(B)  $\frac{3}{8} \times 72$   
 $= (72 \times 8) + 3$   
 $= 576 + 3$

(C)  $72 \div \frac{3}{8}$   
 $= 72 \cdot \frac{8}{3}$   
 $= \frac{72 \cdot 8}{3}$   
 $= \frac{576}{3}$



**Scoring:**

2 points: If selected A, D, E

1 point: If selected any two of A, D, E

0 points: Any other combination of choices

**Key and Distractor Analysis:**

- A. Key. Correctly multiplied by interpreting as a sequence of operations
- B. Students multiplied the whole number by the denominator of the fraction and added the numerator; misapplication of converting mixed numbers to improper fractions.
- C. Students divided rather than multiplied.
- D. Key. Correctly multiplied by factoring numerators and denominators
- E. Key. The bar model correctly shows a way to find the product.

**Number and Operations – Fractions**

**5.NF**

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

- 4a. Interpret the product  $(a/b) \times q$  as parts of a partition of  $q$  into  $b$  equal parts; equivalently, as the result of a sequence of operations  $a \times q \div b$ . For example, use a visual fraction model to show  $(2/3) \times 4 = 8/3$ , and create a story context for this equation. do the same with  $(2/3) \times (4/5) = 8/15$ . (In general,  $(a/b) \times (c/d) = ac/bd$ .)