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Module 6 Computational Fluency of Fractions
Lesson 5 Multiplying Fractions

Challenge Problems

6.5

Set 1

1

Brad found $\frac{8}{15} \times \frac{5}{12}$ by dividing out common factors, then multiplying. Brett found the same product by multiplying without dividing out the common factors but had to write the product in lowest terms. Show that each student got the same product.

Set 2

1

Multiply $3 \times 4\frac{1}{4}$. Then, show how you can find the same product using the Distributive Property to write the mixed number as the sum of an integer and a proper fraction.

Possible Answers

Set 1

1. Brad

$$\begin{aligned} & \frac{8}{15} \times \frac{5}{12} \\ & \frac{\cancel{8}^2}{\cancel{15}_3} \times \frac{\cancel{5}^1}{\cancel{12}_3} \\ & \frac{2 \times 1}{3 \times 3} \\ & \frac{2}{9} \end{aligned}$$

Brett

$$\begin{aligned} & \frac{8}{15} \times \frac{5}{12} \\ & \frac{40}{180} \\ & \frac{2 \times \cancel{20}^1}{9 \times \cancel{20}_1} \\ & \frac{2}{9} \end{aligned}$$

Set 2

1. $3 \times 4\frac{1}{4}$

$$\begin{aligned} & \frac{3}{1} \times \frac{17}{4} \\ & \frac{51}{4} \\ & 12\frac{3}{4} \end{aligned}$$

Using the Distributive Property:

$$\begin{aligned} & 3 \times 4\frac{1}{4} \\ & 3 \times \left(4 + \frac{1}{4} \right) \\ & (3 \times 4) + \left(3 \times \frac{1}{4} \right) \\ & 12 + \frac{3}{4} \\ & 12\frac{3}{4} \end{aligned}$$