

Name: Key
Date: _____

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Math 8

Lesson 3.4 – Multiplying Mixed Numbers

Definition:

Mixed Number -

a number consisting of a whole number and a fraction ; for example $2\frac{1}{4}$ is a mixed number

Notes:

When multiplying mixed numbers follow these steps: $2\frac{1}{3} \times 1\frac{3}{4}$

Step 1 – change the mixed number into an improper fraction

$$2\frac{1}{3} = \frac{7}{3}$$

$$1\frac{3}{4} = \frac{7}{4}$$

Step 2 – Multiply the two numerators together and the two denominators together

$$\frac{7}{3} \times \frac{7}{4} = \frac{49}{12}$$

Step 3 – Reduce fraction to lowest terms

$$\frac{49}{12} \quad ? \text{ (cannot be reduced, always check)}$$

Step 4 – Write your solution as a mixed number

$$\frac{49}{12} = 4\frac{1}{12}$$

Step 5 – Use estimation to see if the product is reasonable.

For instance change $2\frac{1}{3} \times 1\frac{3}{4}$ by using benchmarks. We will estimate that $2\frac{1}{3}$ is close to 2 and that $1\frac{3}{4}$ is close to 2 also. As a result, our answer should be close to 4. If it isn't, then we know our answer is not correct.

Examples:

Multiply the following and then estimate to see if the product is reasonable.

$$\begin{aligned} 1) & 2\frac{2}{3} \times 3\frac{1}{5} \\ &= \frac{8}{3} \times \frac{16}{5} \\ &= \frac{128}{15} \\ &= 8\frac{8}{15} \end{aligned}$$

$$\begin{aligned} 2) & 4\frac{1}{8} \times 3\frac{5}{6} \\ &= \frac{33}{8} \times \frac{17}{6} \\ &= \frac{561}{48} \div \frac{3}{3} \\ &= \frac{187}{16} \\ &= 11\frac{11}{16} \end{aligned}$$

$$\begin{aligned} 3) & 1\frac{7}{8} \times 3\frac{3}{5} \\ &= \frac{15}{8} \times \frac{18}{5} \\ &= \frac{270}{40} \\ &= \frac{27}{4} \\ &= 6\frac{3}{4} \end{aligned}$$

Assignment:

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#s 1-12, 16-17