

Name: Class:

Estimate Products of Fractions, Whole Numbers, and Mixed Numbers

- 1) Estimate the product. Round the first mixed number into the nearest whole and the second mixed number into the nearest hundreds, then multiply.

$$4\frac{2}{3} \times 291\frac{1}{2}$$

- 2) Estimate the product. Round the first fraction into the nearest whole number and the whole number into the nearest ten, then multiply.

$$95\frac{2}{5} \times 255$$

- 3) Estimate the product. Round the whole number into the nearest thousand and the mixed number into the nearest ten, then multiply.

$$2,349 \times 105\frac{2}{3}$$

- 2) Estimate the product. Round the first fraction into the nearest whole number and the whole number into the nearest ten, then multiply.

$$18\frac{2}{5} \times 122$$

- 3) Estimate the product. Round the whole number into the nearest thousand and the mixed number into the nearest ten, then multiply.

$$1,049 \times 95\frac{3}{3}$$

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Estimate Products Of Fractions, Whole Numbers, And Mixed Numbers

1. $4\frac{2}{3} \times 291\frac{1}{2}$

Step 1: convert each mixed number to an improper fraction.

$$4\frac{2}{3} \rightarrow \frac{(4 \times 3) + 2}{3} = \frac{14}{3}$$

$$291\frac{1}{2} \rightarrow \frac{(291 \times 2) + 1}{2} = \frac{583}{2}$$

Step 2: Convert each improper fraction to a decimal number.

$$\frac{14}{3} = 3 \overline{)14.000}$$

$\begin{array}{r} 4.666 \\ - 12 \\ \hline 20 \\ - 18 \\ \hline 20 \\ - 18 \\ \hline 20 \\ - 18 \\ \hline 20 \\ - 18 \\ \hline 2 \end{array}$

← Repeating decimals

← stop

$$\frac{583}{2} = 2 \overline{)583.0}$$

$\begin{array}{r} 291.5 \\ - 4 \\ \hline 18 \\ - 18 \\ \hline 03 \\ - 2 \\ \hline 10 \\ - 10 \\ \hline 0 \end{array}$

Step 3: Now, Round each decimal.

4.666 to the nearest whole number = 5

291.5 to the nearest hundred = 300

Step 4: Multiply.

so, $4\frac{2}{3} \times 291\frac{1}{2} \approx 5 \times 300 = \mathbf{1,500}$

Therefore, the product is 1,500.

2. $95\frac{2}{5} \times 255$

$$\begin{array}{r} 95.4 \\ \downarrow \\ 95 \\ \downarrow \\ 95 \end{array} \quad \begin{array}{r} 255 \\ \downarrow \\ 255 \\ \downarrow \\ 260 \end{array}$$

so, $95\frac{2}{5} \times 255 \approx 95 \times 260 = \mathbf{24,700}$

3. $2,349 \times 105\frac{2}{3}$

$$\begin{array}{r} 2,349 \\ \downarrow \\ 2,349 \\ \downarrow \\ 2,000 \end{array} \quad \begin{array}{r} 105.666 \\ \downarrow \\ 105.666 \\ \downarrow \\ 110 \end{array}$$

So, $2,349 \times 105\frac{2}{3} \approx 2,000 \times 110 = \mathbf{220,000}$