

2.4 Multiplying Fractions w/negatives p.66

Steps:

- ① • Decide if the product (answer) will be negative or positive according to the rules:
 - Ⓐ ◦ 2 numbers:
 - same sign → positive
 - different signs → negative
 - Ⓑ ◦ more than 2 numbers: *count how many are negative*
 - even amount of negatives → positive
 - odd amount of negatives → negative
- ② • turn mixed numbers into improper fractions
 $3\frac{1}{8} = \frac{25}{8} \rightarrow (3 \cdot 8 + 1)$ $5\frac{3}{4} = \frac{23}{4} \rightarrow (5 \cdot 4 + 3)$
- ③ • cross simplify, if possible (reduce) $\frac{2}{3} \cdot \frac{3}{10} = \frac{3}{5}$
- ④ • multiply across $\frac{n \cdot n}{d \cdot d}$
- ⑤ • simplify, if necessary (reduce &/or turn improper fractions back to mixed numbers)

REMEMBER: use parenthesis () to show multiplication; never use x because x is a variable

Examples

$$\textcircled{1} \quad -2\frac{1}{3} \left(-\frac{4}{21}\right) = \boxed{+\frac{4}{9}}$$
$$\frac{7}{3} \cdot \frac{4}{21} = \frac{1 \cdot 4}{3 \cdot 3}$$

$$\textcircled{2} \quad 1\frac{1}{3} \cdot (-7) = \boxed{-9\frac{1}{3}}$$
$$\frac{4}{3} \cdot \frac{7}{1} = \frac{28}{3}$$

$$3) -5\frac{1}{5} \cdot 2\frac{1}{7} = \boxed{-11\frac{1}{7}}$$

$$\frac{26}{\cancel{5}} \cdot \frac{\cancel{15}^3}{7} = \frac{26 \cdot 3}{1 \cdot 7} = \frac{78}{7}$$

$$\begin{array}{r} 26 \\ \times 3 \\ \hline 78 \end{array}$$

$$4) \frac{\cancel{5}^1}{\cancel{6}} \cdot \left(-\frac{\cancel{8}^4}{\cancel{9}^3} \right) = \boxed{-\frac{4}{9}}$$

$$5) \left(-\frac{2}{3} \right)^2 = -\frac{2}{3} \cdot -\frac{2}{3} = \boxed{+\frac{4}{9}}$$

$$6) -3\frac{3}{4} \cdot \frac{5}{6} = \boxed{-3\frac{1}{8}}$$

$$\frac{5}{\cancel{4}} \cdot \frac{\cancel{5}}{\cancel{6}_2} = \frac{25}{8}$$

$$7) 1\frac{5}{6} \cdot \left(-2\frac{3}{4} \right) = \boxed{-5\frac{1}{24}}$$

$$\frac{11}{6} \cdot \frac{11}{4} = -\frac{121}{24}$$