$$\frac{\cancel{2}^{1}}{3}\times\frac{5}{\cancel{12}_{6}}=\frac{5}{18}$$

Remember, you may only do early reducing when *multiplying*fractions. The rules for multiplying signed numbers hold here, too.

Example 4

Reduce early where possible and then multiply.

1. $$\frac{1}{\cancel{4}_{2}}\times\frac{\cancel{2}^{1}}{7}=\frac{1}{14}$$
2. $$\left(-\frac{3}{8}\right)\times\left(-\frac{4}{9}\right)=\left(-\frac{\cancel{3}^{1}}{\cancel{8}_{2}}\right)\times\left(-\frac{\cancel{4}^{1}}{\cancel{9}_{3}}\right)=+\frac{1}{6}$$

Multiplying mixed numbers

To *multiply mixed numbers,* first change any mixed number to an improper fraction. Then multiply.

Example 5

Multiply.

$$3\frac{1}{3}\times 2\frac{1}{4}=\frac{10}{3}\times\frac{9}{4}=\frac{\cancel{10}^{5}}{\cancel{3}_{1}}\times\frac{\cancel{9}^{3}}{\cancel{4}_{2}}=\frac{15}{2}\text{ or }7\frac{1}{2}$$

Change the answer, if in improper fraction form, back to a mixed number and reduce if necessary. Remember, the rules for multiplication of signed numbers apply here as well.

Dividing fractions

To *divide fractions,* invert (turn upside down) the second fraction (the one “divided by”) and multiply. Then reduce if possible.

Example 6

Divide.

$$\frac{1}{6}\div\frac{1}{5}=\frac{1}{6}\times\frac{5}{1}=\frac{5}{6}$$