2.4 Part 2
Dividing Rational Numbers

To divide rational numbers,
use the same rules you used for integers

same signs = positive quotient

$\frac{75}{25} = 3$ $\quad -2.8 \div (-4) = 0.7$

different signs = negative quotient

$\frac{36}{-6} = -6$ $\quad -1.2 \div 0.3 = -4$

Dividing Fractions

Don't Divide!

- Multiply by the reciprocal or "flip"
- Cross Simplify if possible
- Multiply the numerators and denominators
- Simplify

(Keep it, Change it, FLIP it)

Write the reciprocal of the following

$\frac{5}{8} \rightarrow \frac{8}{5}$ $\quad \frac{-2}{3} \rightarrow -\frac{3}{2}$

$-6\frac{3}{4} \rightarrow -\frac{27}{4} \rightarrow -\frac{4}{27}$

$$-\frac{3}{4}$$

Divide. Write fractions in simplest form

1. $\frac{-4}{9} \div \left(\frac{6}{27}\right)$

Multiply by the Reciprocal

(Keep it, Change it, FLIP it)

$-\frac{4}{9} \cdot \left(\frac{27}{6}\right)$

$\frac{-6}{3} = -2$

2. $\frac{-7}{12} \div \left(-\frac{3}{4}\right)$

Multiply by the Reciprocal

(Keep it, Change it, FLIP it)

$\frac{-7}{12} \cdot \left(-\frac{4}{3}\right)$

$\frac{7}{9}$

Dividing Fractions/Mixed Numbers

- Change to improper fractions
- Multiply by the reciprocal
- Cross Simplify if possible
- Multiply the numerators and denominators
- Simplify

Divide. Write fractions in simplest form

$$3\frac{3}{7} \div \left(-2\frac{10}{14} \right)$$

Change to improper fractions

Multiply by the Reciprocal

(Keep it, Change it, FLIP it)

$$\frac{24}{7} \div \left(-\frac{38}{14} \right)$$

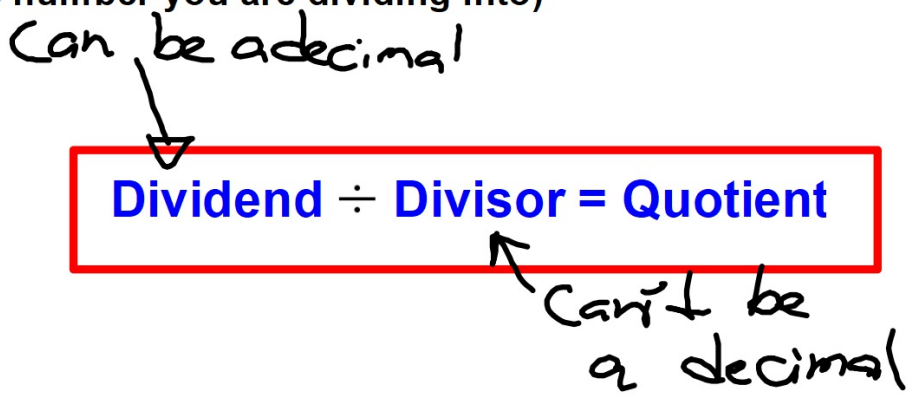
$$\frac{\cancel{24}^{12}}{\cancel{7}_{1}} \cdot \left(-\frac{\cancel{14}^{2}}{\cancel{38}_{19}} \right) = -\frac{24}{19} = -1\frac{5}{19}$$

Dividing Decimals

- **Move decimal in the Divisor so that you are dividing by a whole number.**

- **Move decimal the same number of places in the Dividend.**

  (the number you are dividing into)



Divide.

$9 \div (-7.2)$

The quotient is

$-7.2 \overline{)\,90}$

$\times 10 \quad \times 10$

$-72 \overline{)\,90.00}$

1.25

72

180

144

360

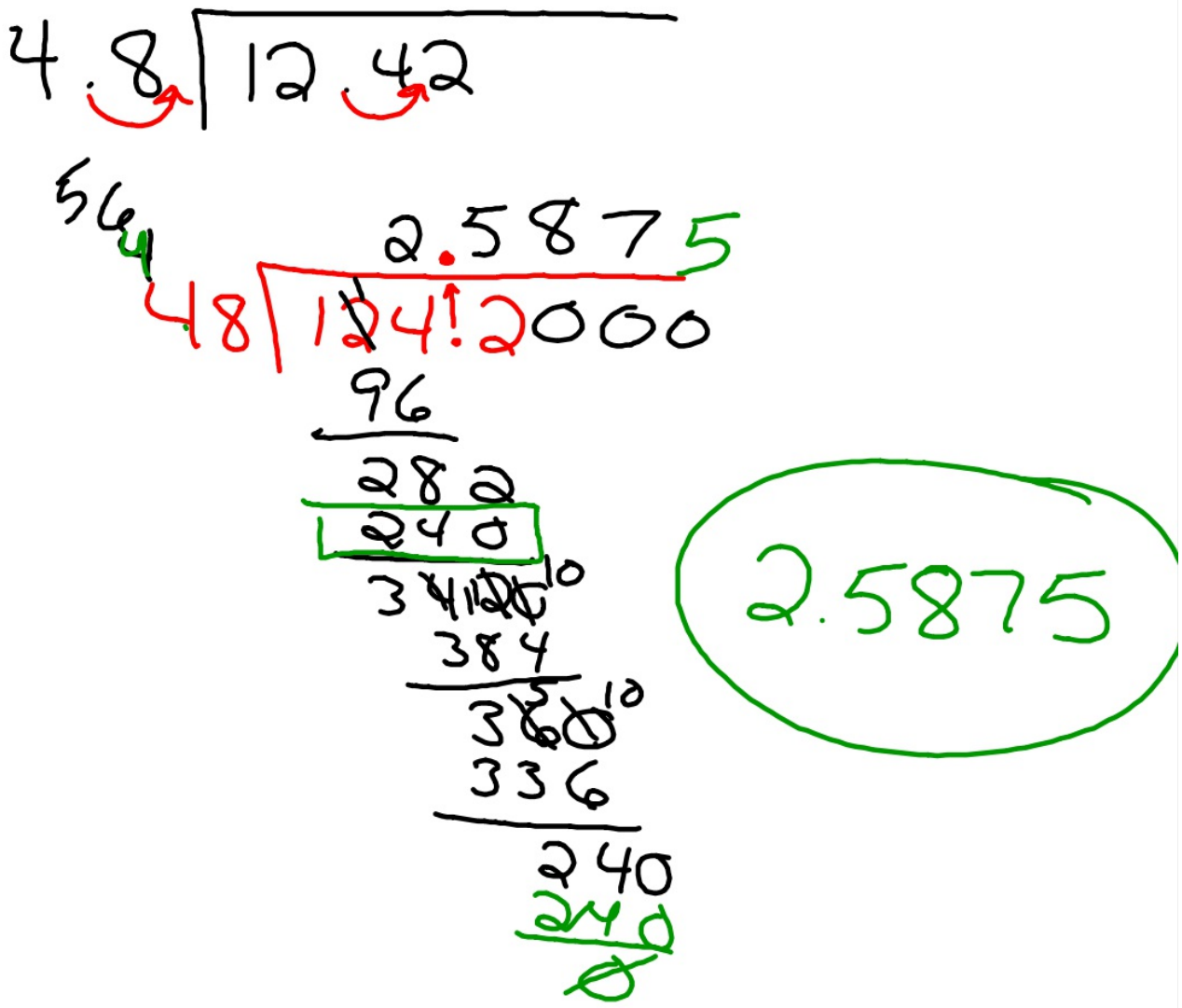
360

0

-1.25

Divide.

$$-12.42 \div (-4.8)$$



Real-Life Application

Goodie Bags

How many 0.25-pound packages can you make with 7 pounds of m&m's?

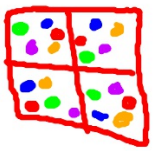
$0.25 = \frac{1}{4}$

$7 \div \frac{1}{4}$

7.4

28

So $\frac{4}{4}$ in 1 lb



4 bags in each lb

$4 * 7 = 28$ Goodie Bags

$7 \div 0.25$

$$25 \overline{)700}$$

28

50

200

200

0

28

Homework

pg 68 & 69

10-20 even

34, 44, 45