

Worked Examples

1. Seven friends go out for pizza and the bill is \$43. How much should each person pay? (Each person pays the same amount.)

$$43 \div 7 = \frac{43}{7} \approx 6.14$$

Each pays about \$6.14

$$\begin{array}{r}
 6.142 \approx 6.14 \\
 7 \overline{) 43.000} \\
 \underline{-42} \\
 10 \\
 \underline{-7} \\
 30 \\
 \underline{-28} \\
 20 \\
 \underline{-14} \\
 6
 \end{array}$$

Tips:

- Put the decimal point in the answer right away.
- Keep the numbers lined up in columns.

2. Convert each to a decimal. Round to 2 places after the decimal point, if needed.

a. $\frac{19}{5}$

$$\frac{19}{5} = 3.8$$

$$\begin{array}{r}
 3.8 \\
 5 \overline{) 19.0} \\
 \underline{-15} \\
 40 \\
 \underline{-40} \\
 0
 \end{array}$$

b. $3\frac{2}{7}$

$$\frac{2}{7} = 2 \div 7$$

$$3\frac{2}{7} \approx 3.29$$

\approx means "approximately equal to"

$\frac{19}{5}$ terminates

$\frac{2}{7}$ will repeat eventually

$$\begin{array}{r}
 .285\dots \\
 7 \overline{) 2.000} \\
 \underline{-14} \\
 60 \\
 \underline{-56} \\
 40 \\
 \underline{35} \\
 5
 \end{array}$$

3. The artist has 9 grams of gold. The artist will make pendants which will each have .12 grams of gold. How many pendants can the artist make?

$$\frac{9}{.12} = 75$$

75 pendants can be made

$$\begin{array}{r}
 75. \\
 .12 \overline{) 9.00} \\
 \underline{-84} \\
 60 \\
 \underline{-60} \\
 0
 \end{array}$$

The decimal point in the divisor (out in front) must be moved to the right to make it a natural number. Move the decimal point in the dividend (inside) the same number of places.

4. Chocolate covered peanuts cost \$3.14 per pound. If you have \$7.80, how much can you buy? Express the answer to the nearest tenth, if needed.

$$7.80 \div 3.14 \approx 2.5$$

Rounded *off* would give 2.5 pounds. Here, the best answer (so you don't spend more than you have) is

You can buy 2.4 pounds

$$\begin{array}{r}
 2.48 \\
 3.14 \overline{) 7.8000} \\
 \underline{-628} \\
 1520 \\
 \underline{-1256} \\
 2740 \\
 \underline{2512} \\
 228
 \end{array}$$

Objectives:

- Perform long division to get:
 - A quotient which is a decimal.
- Convert fractions (& mixed numbers) to decimals.
- Divide decimals (using long division).