03-30-26 MDE 10

4.3 Adding and Subtracting Decimals
4.3 Exercise Set, page 270:3, 9, 13, 17, 23, 31, 49

4.4 Multiplying Decimals and Circumference of a Circle
4.4 Exercise Set, page 281: 1, 7,11, 41, 47, 53

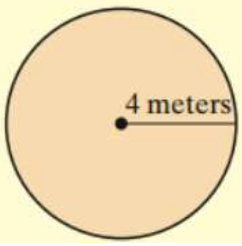
4.5 Dividing Decimals and Order of Operations
4.5 Exercise Set, page 294: 1, 5, 7, 9, 35, 41, 45, 55, 85

4.6 Fractions and Decimals
4.6 Exercise Set, page 303: 3, 13, 17, 27

4.4: 47

Objective D *Find the circumference of each circle. Then use the approximation 3.14 for π and approximate each circumference. See Example 12.*

47.



$C = 2\pi r$

C = circumference
r = radius

$C = 2\pi(4\text{ m})$

$C = 8\pi\text{ m} \approx 25.12\text{ m}$

8*3.14=25.12

Objective C *Multiply. See Examples 5 through 10.*

27. 37.62×0.001

.03762

37.62*0.001=0.0376 (note, One-Note rounded to the nearest ten thousandth.)

37.62*0.0001=0.0038 (wrong)

.000038

37.62*0.1=3.762
37.62*10^(-4)=0.0038 (Wrong)

34. 0.42×5.7

check by estimating

$0.4 \times 6 = 2.4$

$$\begin{array}{r} 0.42 \\ \times\ 5.7 \\ \hline 294 \\ 210 \\ \hline 2.394 \end{array}$$

$.080 \times 1000 = 80$ (3 places)

$45 \times 100 = 4500$

$36 \times 0.25 = 9$

$$\begin{array}{r} 36 \\ 0.25 \\ \hline 180 \end{array}$$

$= 36 \times \frac{1}{4} = 9$

180
72
9.00

Round to nearest digit to estimate.

$$\begin{array}{r} 5.62 \\ \times\ 7.7 \\ \hline \end{array} \approx \begin{array}{r} 6 \\ \times\ 8 \\ \hline 48 \end{array}$$

3934

3934
43.274

4.5
Memorize

Dividing by a Whole Number

Step 1: Place the decimal point in the quotient directly above the decimal point in the dividend.

Step 2: Divide as with whole numbers.

$$\begin{array}{r} 2.0576 \\ 25\overline{)51.4400} \\ 50 \\ \hline 14 \\ 0 \\ \hline 144 \\ 125 \\ \hline 190 \\ 175 \\ \hline 150 \\ 150 \end{array}$$

$$\begin{array}{r} 150 \\ 150 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 28.5 \\ 3.2\overline{)91.40} \\ 64 \\ \hline 274 \\ 256 \\ \hline 180 \\ 160 \\ \hline 20 \end{array}$$

round to nearest tenth

≈ 28.6

$$\frac{91.4}{3.2} = \left(\frac{91.4}{3.2}\right)\left(\frac{10}{10}\right) = \frac{914}{32}$$

$$32\overline{)914}$$

$$\begin{array}{r} 10,000 \\ 5\overline{)50,000} \end{array}$$

$$.06\overline{)480.183}$$

480.183/0.06

8003.05

Memorize

Dividing Decimals by Powers of 10 such as 10, 100, or 1000

Move the decimal point of the dividend to the *left* the same number of places as there are *zeros* in the power of 10.

4.6
Memorize

Writing Fractions as Decimals

To write a fraction as a decimal, divide the numerator by the denominator.

$\frac{3}{5}$

$5\overline{)3.0}$ → $.6$, 20, 0

$= .6$

$\left(\frac{3}{5}\right)(1) = \left(\frac{3}{5}\right)\left(\frac{2}{2}\right) = \frac{6}{10} = 0.6$

$\frac{35}{100} = 0.35$

$\frac{35}{100} = 35\left(\frac{1}{100}\right) = 35(0.01) = 0.35$

Example 2 Write $\frac{2}{3}$ as a decimal.

Solution:

$$
\begin{array}{r}
0.666\ldots \\
3\overline{)2.000} \\
-18 \\
\hline
20 \\
-18 \\
\hline
20 \\
-18 \\
\hline
2
\end{array}
$$

This pattern will continue because $\frac{2}{3} = 0.6666\ldots$

Remainder is 2, then 0 is brought down.

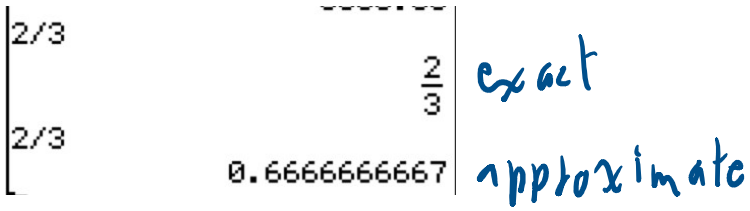
Remainder is 2, then 0 is brought down.

Remainder is 2.

Notice the digit 2 keeps occurring as the remainder. This will continue so that the digit 6 will keep repeating in the quotient. We place a bar over the digit 6 to indicate that it repeats.

$$\frac{2}{3} = 0.666\ldots = 0.\overline{6}$$ exact

We can also write a decimal approximation for $\frac{2}{3}$. For example, $\frac{2}{3}$ rounded to the nearest hundredth is 0.67. This can be written as $\frac{2}{3} \approx 0.67$. approximate



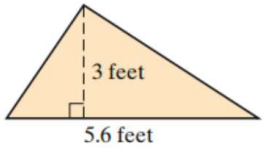
exact

approximate

2/3=0.6667

Memorize

Example 10 The area of a triangle is Area $= \frac{1}{2} \cdot \text{base} \cdot \text{height}$. Find the area of the triangle shown.



Solution:

$$\text{Area} = \frac{1}{2} \cdot \text{base} \cdot \text{height}$$
$$= \frac{1}{2} \cdot 5.6 \cdot 3$$
$$= 0.5 \cdot 5.6 \cdot 3 \qquad \text{Write } \frac{1}{2} \text{ as the decimal } 0.5.$$
$$= 8.4$$

The area of the triangle is 8.4 square feet.

tion. Inc.

Your name MDE 10 quiz 4 no calculator.

1. Multiply 17.4×8.8

Then estimate by rounding the given numbers in some convenient way.

$$\begin{array}{r} 17.4 \\ \times\ 8.8 \\ \hline 1392 \\ 1392 \\ \hline 153.12 \end{array}$$

$$\begin{array}{r} 17 \\ \times\ 9 \\ \hline 153 \end{array}$$

2. Add $141.34 + 92.1$

Then estimate by rounding the given numbers in some convenient way.

$$\begin{array}{r} 141.34 \\ +\ 92.10 \\ \hline 233.44 \end{array}$$

$$\begin{array}{r} 140 \\ +\ 90 \\ \hline 230 \end{array}$$

3. Change $\frac{2}{5}$ to a decimal. Show your calculation.

$$\frac{2}{5}$$

$$5\overline{)2.0}$$

$\frac{2}{5}$

$$5 \overline{)2.0}$$
$$\underline{20}$$

or $\frac{2}{5} = \left(\frac{2}{5}\right)(1) = \left(\frac{2}{5}\right)\left(\frac{2}{2}\right) = \frac{4}{10} = 0.4$