



MATHEMATICS 507

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I. Part One

Objectives

To divide with a 2-digit divisor
To add zeros to the minuend when subtracting decimals
To multiply whole numbers and decimals

Every number has a set of multiples. For example ...
the multiples of 20 are 20, 40, 60, 80, 100, 120, 140, 160, 180, 200, ...

1.1 Write the multiples of these tens' numbers. Begin with the number.

- a. 30 _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____
- b. 40 _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____
- c. 50 _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____
- d. 60 _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____
- e. 70 _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____
- f. 80 _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____
- g. 90 _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____

We follow the same steps to divide with a 2-digit divisor that we followed for a 1-digit divisor.

$$\begin{array}{r} 6 \\ 20 \overline{)120} \\ \underline{120} \\ 0 \end{array}$$

Try to divide 20 into 1 and 12.

They are too small to be multiples of 20.

Try to divide 20 into 120. The largest multiple of 20 that is equal to or less than 120 is 120. $6 \times 20 = 120$

Write 6 in the quotient above 0. Multiply. $6 \times 20 = 120$

Write 120 below 120 in the problem. Subtract. $120 - 120 = 0$

Compare. 0 is less than the divisor (20).

There are no numbers in the dividend to bring down.

1.2 Follow the steps. Divide.

- a. $40 \overline{)160}$ $60 \overline{)240}$ $30 \overline{)270}$ $70 \overline{)140}$
- b. $80 \overline{)560}$ $90 \overline{)630}$ $50 \overline{)200}$ $40 \overline{)320}$

There may be a remainder when we divide with a 2-digit divisor.

$$\begin{array}{r} 5 \text{ R}4 \\ 30 \overline{)154} \\ \underline{150} \\ 4 \end{array}$$

Try to divide 30 into 1 and 15.

They are too small to be multiples of 30.

Try to divide 30 into 154. The largest multiple of 30 that is equal to or less than 154 is 150. $5 \times 30 = 150$.

Write 5 in the quotient above 4. Multiply. $5 \times 30 = 150$.

Write 150 below 154 in the problem. Subtract. $154 - 150 = 4$

Compare. 4 is less than the divisor (30).

There are no numbers in the dividend to bring down.

The answer is 5 with a remainder of 4.

1.3 Follow the steps. Divide.

a.

$40 \overline{)165}$

$60 \overline{)367}$

$50 \overline{)253}$

$90 \overline{)187}$

b.

$30 \overline{)218}$

$80 \overline{)247}$

$40 \overline{)283}$

$70 \overline{)355}$

c.

$60 \overline{)437}$

$60 \overline{)261}$

$80 \overline{)579}$

$50 \overline{)352}$

It is easy to remember the multiples of the tens' numbers.

Multiply the number. Add a zero.

$2 \times 8 = 16$

$2 \times 80 = 160$

$7 \times 9 = 63$

$7 \times 90 = 630$

1.4 Write the missing multiples.

a. $3 \times 7 = \underline{\quad}$ $3 \times 70 = \underline{\quad}$

$5 \times 8 = \underline{\quad}$ $5 \times 80 = \underline{\quad}$

b. $4 \times 3 = \underline{\quad}$ $4 \times 30 = \underline{\quad}$

$9 \times 2 = \underline{\quad}$ $9 \times 20 = \underline{\quad}$

c. $6 \times 5 = \underline{\quad}$ $6 \times 50 = \underline{\quad}$

$1 \times 4 = \underline{\quad}$ $1 \times 40 = \underline{\quad}$

d. $7 \times 6 = \underline{\quad}$ $7 \times 60 = \underline{\quad}$

$8 \times 8 = \underline{\quad}$ $8 \times 80 = \underline{\quad}$

e. $2 \times 9 = \underline{\quad}$ $2 \times 90 = \underline{\quad}$

$9 \times 1 = \underline{\quad}$ $9 \times 10 = \underline{\quad}$

■ Think of the multiples of 10, 20, 30, ... when dividing by a 2-digit number.

$$\begin{array}{r} 6 \text{ R}47 \\ 80 \overline{)527} \\ \underline{480} \\ 47 \end{array}$$

Try to divide 80 into 5 or 52.

They are too small to be multiples of 80.

Try to divide 80 into 527. The largest multiple of 80 that is equal to *or* less than 527 is 480. $6 \times 80 = 480$.

Write 6 in the quotient above 7. Multiply. $6 \times 80 = 480$

Write 480 below 527 in the problem. Subtract. $527 - 480 = 47$

Compare. 47 is less than the divisor (80).

There are no numbers in the dividend to bring down.

The answer is 6 with a remainder of 47.

1.5 Follow the steps. Divide.

a.

$$60 \overline{)134}$$

$$40 \overline{)169}$$

$$20 \overline{)187}$$

$$80 \overline{)259}$$

b.

$$30 \overline{)136}$$

$$70 \overline{)183}$$

$$90 \overline{)472}$$

$$50 \overline{)178}$$

c.

$$40 \overline{)264}$$

$$20 \overline{)148}$$

$$30 \overline{)246}$$

$$70 \overline{)381}$$

d.

$$80 \overline{)590}$$

$$50 \overline{)423}$$

$$60 \overline{)381}$$

$$90 \overline{)293}$$

1.6 Describe each of the decimals as a (F) fraction or (M) mixed number.

3.5 _____ .08 _____ .256 _____ 43.02 _____ 9.063 _____ .701 _____

1.7 Write in words.

2.08 _____

.621 _____

1.8 Write in digits.

thirty-five thousandths _____ two and five hundredths _____

1.9 Write as vertical problems. Complete columns by adding zeros. Find the sum.

a. $3.295 + .46 + 1.7 =$

b. $6.3 + .028 + 5.42 =$

c. $.004 + 36.7 + 8 =$

 We may need to add a zero in subtraction of decimals.

$$\begin{array}{r} 62.3 \\ - 25.87 \\ \hline \end{array}$$

We cannot subtract the 7. 62.3 has no number in hundredths' place.

We know that $\frac{3}{10}$ and $\frac{30}{100}$ are equivalent fractions.

It follows that .3 and .30 are equivalent decimals.

$$\begin{array}{r} 62.30 \\ - 25.87 \\ \hline 36.43 \end{array}$$

Change .3 to .30 by adding a zero.

Subtract as whole numbers. Remember to borrow.

Write the decimal point in the answer.

1.10 Complete columns by adding zeros. Find the difference.

a.
$$\begin{array}{r} 3.4 \\ - 1.68 \\ \hline \end{array}$$

$$\begin{array}{r} 48.5 \\ - 24.17 \\ \hline \end{array}$$

$$\begin{array}{r} 6.8 \\ - 1.248 \\ \hline \end{array}$$

$$\begin{array}{r} 7.03 \\ - 1.126 \\ \hline \end{array}$$

b.
$$\begin{array}{r} .97 \\ - .482 \\ \hline \end{array}$$

$$\begin{array}{r} 4.01 \\ - .263 \\ \hline \end{array}$$

$$\begin{array}{r} 8.5 \\ - 2.116 \\ \hline \end{array}$$

$$\begin{array}{r} .5 \\ - .382 \\ \hline \end{array}$$