

1.26 Long Division

• Example 1

Divide

$$38 \overline{)293}$$

How many times does 38 go into 293?

$$\begin{array}{r} 7 \leftarrow \text{Your estimate} \\ 38 \overline{)293} \\ \underline{266} \\ 27 \end{array} \quad \begin{array}{l} \text{Multiply } 7 \times 38. \text{ The product, } 266, \text{ is less} \\ \text{than } 293, \text{ and so we can subtract.} \end{array}$$

The remainder, 27, is less than the divisor, 38, and so the process is complete.

$$293 \div 38 = 7 \text{ r}27$$

Check: $293 = 38 \times 7 + 27$ You should verify that this statement is true.

● ● ● CHECK YOURSELF 1

Divide.

$$57 \overline{)482}$$

• Example 2

Divide.

$$43 \overline{)948}$$

How many times does 43 go into 94?

Our first estimate of the quotient is 2.

$$\begin{array}{r} 2 \\ 43 \overline{)948} \\ \underline{86} \\ 8 \end{array}$$

We bring down 8, the next digit of the dividend, and repeat the process of estimating the quotient.

$$\begin{array}{r} 22 \\ 43 \overline{)948} \\ \underline{86} \\ 88 \\ \underline{86} \\ 2 \end{array}$$

$$948 \div 43 = 22 \text{ r}2$$

$$\text{Check: } 948 = 43 \times 22 + 2$$

● ● ● CHECK YOURSELF 2

Divide.

$$37 \overline{)859}$$

● ● ● CHECK YOURSELF ANSWERS

1. 8 r26. 2. 23 r8.

There is a difference between this and our previous example. Look at the first two digits of the dividend. Our divisor, 43, is smaller than 94.

1.26 Exercises

Name _____

Section _____

Date _____

Divide and check your results.

1. $58\overline{)345}$

2. $39\overline{)821}$

3. $63\overline{)429}$

4. $49\overline{)379}$

5. $48\overline{)892}$

6. $54\overline{)372}$

7. $23\overline{)534}$

8. $67\overline{)939}$

9. $47\overline{)392}$

10. $54\overline{)429}$

11. $36\overline{)837}$

12. $28\overline{)692}$

13. $38\overline{)251}$

14. $53\overline{)783}$

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____