

Unit 2 - Practice Test and Study Guide**Directions: Solve the number riddles.**

- 1.) I am a 5 digit number.
 My 6 is worth $6 \times 10,000$.
 My 2 is worth 200.
 One of my 3s is worth 3.
 The other 3 is worth 1,000 times as much.
 My other digit is a 7.

$$\begin{array}{r} 6 \\ \hline \text{TTH} \end{array} \quad \begin{array}{r} 3 \\ \hline \text{TH} \end{array} \quad \begin{array}{r} 2 \\ \hline \text{H} \end{array} \quad \begin{array}{r} 7 \\ \hline \text{T} \end{array} \quad \begin{array}{r} 3 \\ \hline 0 \end{array}$$

What number am I? 63,273

- 2.) I am a 6 digit number.
 One of my 5s is worth 500,000.
 The other 5 is worth $\frac{1}{10}$ as much.
 My 6 worth 6 [100s].
 My 4 is worth 40.
 My other digits are 0.

$$\begin{array}{r} 5 \\ \hline \text{HTH} \end{array} \quad \begin{array}{r} 5 \\ \hline \text{TTH} \end{array} \quad \begin{array}{r} 0 \\ \hline \text{TH} \end{array} \quad \begin{array}{r} 6 \\ \hline \text{H} \end{array} \quad \begin{array}{r} 4 \\ \hline \text{T} \end{array} \quad \begin{array}{r} 0 \\ \hline 0 \end{array}$$

What number am I? 550,640

3.) Answer the questions about Avery.

a.) Avery collects cans for recycling. When he has 1,000 cans, the recycling center will pick them up from his house. Avery has 80 bags with about 40 cans in each bag. Should he call the recycling center to arrange a pick up? Explain how you know.

$80 \times 40 = 3200$ Yes Avery should call because
he has about 3,200 cans.

b.) Did you have to find an exact answer to solve problem a? Explain why or why not.

No we did not. It says he has about 40
cans in each bag, so the number is an
estimate.

4.) Complete the table.

Standard Notation	Products of 10s	Exponential Notation
10	10	10^1
1,000	$10 * 10 * 10$	10^3
100,000	$10 * 10 * 10 * 10 * 10$	10^5
10,000,000	$10 * 10 * 10 * 10 * 10 * 10 * 10$	10^7

5.) Solve the problems.

- a.) Asha and Carol were playing *High-Number Toss*. They created the numbers shown below. Write each player's number in standard notation. Name the player who won the round.

Asha: $378 * 10^4 = 3,780,000$

Carol: $657 * 10^3 = 657,000$ Who won the round? Asha

- b.) Explain how you wrote each number in standard notation.

Using the exponent on the 10, you place the same number of zeroes on the end of that number

- 6.) Write the number 1,744,326 in expanded form.

$1,000,000 + 700,000 + 40,000 + 4,000 + 300 + 20 + 6$

7. Convert pounds to ounces in the table.

Pounds	Ounces	Pounds	Ounces
1	16	6	96
3	48	8	128
4	64	10	160

8.) Write an expression with grouping symbols to model the number story. Use an asterisk (*) to represent multiplication if needed.

Colin is shipping a gift to his cousin. The gift weighs 6 pounds. The box and shipping materials weigh 11 ounces. What is the total weight of the package in ounces?

Number Model: $(6 \times 16) + 11$

Answer: 107 ounces $(6 \times 16) + 11$
 $96 + 11 = 107$

9.) Create a mathematical model for the problem. Then solve the problem and show your work.

Patrick is helping out in the school library. He needs to figure out how many shelves the library staff should order for a new reading corner. There are 276 books for the reading corner. Each shelf holds 45 books. The librarian wants to put all the books on shelves. How many shelves should the library order?

Quotient: 6 Remainder: 6

$$\begin{array}{r} 6R6 \\ 45 \overline{)276} \\ \underline{-270} \\ 6 \end{array}$$

What does the remainder represent? State whether you ignored the remainder or rounded the remainder up. Why?

The remainder is the number of books that do not fit on the shelves. We should round the quotient up because we want all books on shelves.

Answer: The library should order 7 shelves

Make an estimate. Then solve the U.S. traditional multiplication. Use your estimate to check whether your answer makes sense.

10.) $478 \times 6 = ?$

Estimate: $500 \times 6 = 3,000$

Answer: 2,868

$$\begin{array}{r} 44 \\ 478 \\ \times 6 \\ \hline 2868 \end{array}$$

11.) $39 \times 21 = ?$

Estimate: $40 \times 20 = 800$

Answer: 819

$$\begin{array}{r} 39 \\ \times 21 \\ \hline 78 \\ + 39 \\ \hline 819 \end{array}$$

12.) $825 \times 4 = ?$

Estimate: $800 \times 4 = 3200$

Answer: 3300

$$\begin{array}{r} \overset{1}{8} \overset{2}{2} 5 \\ \times 4 \\ \hline 3300 \end{array}$$

13.) $68 \times 15 = ?$

Estimate: $70 \times 10 = 700$

Answer: 1020

$$\begin{array}{r} \overset{4}{6} 8 \\ \times 15 \\ \hline 340 \\ + 680 \\ \hline 1020 \end{array}$$

Make an estimate. Then solve using long division. Use your estimate to check whether your answer makes sense.

14.) $225 \div 9 = ?$

Estimate: $270 \div 9 = 30$

Answer: 25

$$\begin{array}{r} 25 \\ 9 \overline{) 225} \\ \underline{-18} \\ 45 \\ \underline{-45} \\ 0 \end{array}$$

15.) $880 \div 20 = ?$

Estimate: $1,000 \div 20 = 50$

Answer: 44

$$\begin{array}{r} 44 \\ 20 \overline{) 880} \\ \underline{-80} \\ 80 \\ \underline{-80} \\ 0 \end{array}$$

16.) $731 \div 9 = ?$

Estimate: $720 \div 9 = 80$

Answer: $81 R 2$

$$\begin{array}{r} 81 R 2 \\ 9 \overline{) 731} \\ \underline{-72} \\ 11 \\ \underline{-9} \\ 2 \end{array}$$

17.) $657 \div 31 = ?$

Estimate: $600 \div 30 = 20$

Answer: $21 R 6$

$$\begin{array}{r} 21 R 6 \\ 31 \overline{) 657} \\ \underline{-62} \\ 37 \\ \underline{-31} \\ 6 \end{array}$$