

Answer Key: Place Value Word Problems

5. Explain how you solved $(4 \text{ ten thousands } 3 \text{ tens}) \div 10$. Use a place value chart to support your explanation.

$4 \text{ ten thousands } 3 \text{ tens} \div 10 = 4,030$

Place Value Chart

Ten thousands	Thousands	Hundreds	Tens	Ones
4	0	0	3	0
4	0	0	3	0

Shift when $\div 10$

4,003

So, $40,030 \div 10$
 is the same as saying
 $10 \times m = 40,030$
 $m = 4,003$

When dividing by ten, each digit in place-value chart shifts to the right one column.
 So, 4 tens thousands $\div 10 = 4$ thousand.
 3 tens $\div 10 = 3$ ones. Answer is 4 thousands 3 ones = 4,003.

6. Jacob saved 2 thousand dollar bills, 4 hundred dollar bills, and 6 ten dollar bills to buy a car. The car costs 10 times as much as he has saved. How much does the car cost?

2 thousand dollar bills
 4 hundred dollar bills
 6 ten dollar bills

Place Value

Ten thousands	Thousands	Hundreds	Tens	Ones
	2	4	6	0
2	4	6	0	0

$\times 10$

The problem is asking us to figure out how much money Jacob has, so we can figure out the price of the car, which is 10x his savings. The total that Jacob has is \$2,460. The car is 10x that amount. $2,460 \times 10 = \$24,600$, which is the price of car. Because we are multiplying by 10, we shift the place values to the right. The car costs 24,600 in the place value chart.

7. Last year the apple orchard experienced a drought and did not produce many apples. But this year, the apple orchard produced 45 thousand Granny Smith apples and 9 hundred Red Delicious apples, which is 10 times as many apples as last year. How many apples did the orchard produce last year?

Place Value Chart

Ten thousands	Thousands	Hundreds	Tens	Ones
4	5	9	0	0
4	5	9	0	0

This answer is 4,590 apples. When dividing by 10, shift numbers in place value over to the right one column.

45,000 Granny Smiths
 900 Red Delicious
 Total apples produced this year = 45,900
 This year is 10x's more than last year, so
 $45,900 \div 10 = m$. This is the same as $10 \times m = 45,900$
 $m = 4,590$ apples.

8. Planet Ruba has a population of 1 million aliens. Planet Zamba has 1 hundred thousand aliens.
 a. How many more aliens does Planet Ruba have than Planet Zamba?

$$\begin{array}{r} \text{ck} \\ 900,000 \\ + 100,000 \\ \hline 1,000,000 \end{array} \checkmark$$

Planet Ruba population 1,000,000 aliens
 Planet Zamba population 100,000 aliens

The problem is asking us to find the difference between the two populations, so we know how many more aliens are on planet Ruba.

Place Value chart	million	hundred thousand	ten thousand	thousand	hundred	tens	one
Ruba	1	0	0	0	0	0	0
Zamba		1	0	0	0	0	0
difference	9	0	0	0	0	0	0

Ruba has ~~1,000,000~~ 900,000 more aliens than planet Zamba

$$\begin{array}{r} 1,000,000 \\ - 100,000 \\ \hline 900,000 \text{ aliens} \end{array}$$

- b. Write a sentence to compare the populations for each planet using the words 10 times as many.

Planet Ruba has 10 times as many aliens on its planet than Planet Zamba.

$$100,000 \times 10 = 1,000,000 \text{ aliens}$$

Zamba's pop. Ruba's pop.

Name _____

Date _____

1. Fill in the blank to make a true number sentence. Use standard form.

a. (4 ten thousands 6 hundreds) $\times 10 =$ $\frac{40,600 \times 10 = 406,000}{\text{CK } 406,000 \div 10 = 40,600}$

b. (8 thousands 2 tens) $\div 10 =$ $\frac{8,020 \div 10 = 802}{\text{CK } 802 \times 10 = 8,020}$

2. The Carson family saved up \$39,580 for a new home. The cost of their dream home is 10 times as much as they have saved. How much does their dream home cost?

\$39,580 money saved
10x's money saved new home

The problem is asking us to find the total cost of the new home

$39,580 \times 10 = \$395,800$ cost of new home

millions	hundred thousand	ten thousand	thousands	hundreds	tens	ones
	3	9	5	8	0	0
	3	9	5	8	0	0

or

When multiplying by 10 we shift place value one spot over to the left. So, new home cost is \$395,800