Estimation and Rounding Large Numbers

A. Fill in the Blanks

1. To round a number, we look at the digit to the _____ of the place value we are rounding to.

2. When estimating the result of a division problem like 4,321 ÷ 8, it is helpful to use _____ numbers, such as 4,000 ÷ 8.

3. The number 8,499,999 rounded to the nearest million is _____.

4. Estimation gives us an _____ answer, not an exact one.

5. When rounding 6,751 to the nearest hundred, the digit in the hundreds place will be _____.

### B. Match the problem in Column A with the best estimated answer in Column B.

Column A (Problem)	Column B (Estimated Answer)
1. 9,870 + 2,130	A. 1,400,000
2. 48,910 - 11,230	B. 12,000
3. 6,890 x 203	C. 20
4. 8,123,450 ÷ 4	D. 40,000
5. 987 ÷ 49	E. 2,000,000

C. Estimate the answer for each problem by first rounding the numbers to a suitable place value. State the place value you rounded to.

1. Estimate the quotient of 8,075 ÷ 9. (Hint: Use compatible numbers).

2. Estimate the product: 7,120 x 189.

3. Estimate the quotient: 48,788 ÷ 68.

4. Estimate: (4,812 + 2,109) x 11.

5. Estimate: 9,450,100 ÷ 48.

D. Round the following numbers to the place value indicated.

1. Round 8,742 to the nearest hundred.

2. Round 54,510 to the nearest thousand.

3. Round 798,213 to the nearest ten thousand.

4. Round 5,281,990 to the nearest million.

5. Round 9,999,600 to the nearest hundred thousand.
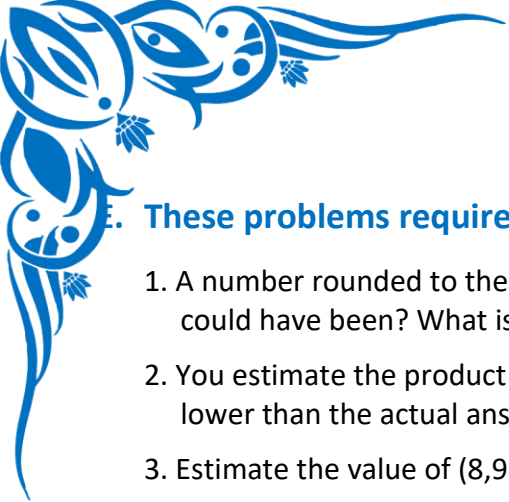
E. These problems require multiple steps or deeper thinking.

1. A number rounded to the nearest thousand is 24,000. What is the smallest possible whole number it could have been? What is the largest? Smallest: _____ Largest: _____

2. You estimate the product of 487 x 210 by rounding to 500 x 200. Is your estimate likely to be higher or lower than the actual answer? Explain why.

3. Estimate the value of (8,987,450 – 2,012,345) ÷ 34. Show your estimation steps.

4. The population of a country is 67,812,340. It is projected to increase by 18% over the next 10 years. Estimate the population after 10 years. (Hint: First estimate the population increase).

5. Three different charities raised 487,120,487,120,1,210,450, and $755,980 respectively. Estimate the average amount raised by the three charities.

F. Use estimation to solve the following real-world problems.

1. A concert stadium has a capacity of 52,000 people. Over three nights, the attendance was 48,912, 51,210, and 47,880. Estimate the total attendance for the three nights by rounding each number to the nearest thousand.

2. A company needs to ship 8,745 packages. Each package weighs approximately 18 kilograms. Estimate the total weight of all the packages.

3. The distance from New York City to Los Angeles is approximately 2,790 miles. If a family drives an average of 385 miles per day, estimate how many days it will take them to complete the trip.

4. A school has a budget of 25,000fornewcomputers.Ifeachcomputercosts25,000fornewcomputers.Ifeachcomputercosts1,189, estimate how many computers the school can afford to buy.

5. A forest has 812,450 trees. A wildfire burns 28% of the forest. Estimate the number of trees that were burned.

G. True or False

1. The number 34,500 rounded to the nearest thousand is 34,000. _____

2. An estimated answer is always smaller than the exact answer. _____

3. To estimate 48 x 79, rounding to 50 x 80 gives a reasonable approximation. _____

4. 7,982,111 rounded to the nearest million is 7,000,000. _____

5. When estimating 5,821 ÷ 28, rounding to 6,000 ÷ 30 is a good strategy. _____