Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Answer the following questions about estimating with subtraction:**

1. First **estimate** 593 – 178 by **rounding**.

 Estimation: \_\_\_\_\_\_\_\_\_\_\_\_

 Then **subtract** to find the **exact** value of 593 – 178.

Exact value: \_\_\_\_\_\_\_\_\_\_\_\_

 Was the estimate an **over OR under**estimate of the exact value? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. First **estimate** 478 – 293 by **rounding**.

 Estimation: \_\_\_\_\_\_\_\_\_\_\_

 Then **subtract** to find the **exact** value of 478 – 293.

 Exact value: \_\_\_\_\_\_\_\_\_\_\_\_

 Was the estimate an **over OR under**estimate of the exact value? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Notice that in each problem you rounded both numbers up to find your estimate. Do you think rounding both numbers up in a subtraction problem *always* produces an overestimate, *always* produces an underestimate, or *sometimes* produces an overestimate or underestimate?

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4.

 **A** **B C D**

On the number line above, A, B, C, and D represent whole numbers. Which is bigger, D – A or C – B? How do you know? (Hint: think of **subtraction** as a way to find the ***difference*** between two numbers.)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. First **estimate** 281 – 132 by **rounding to the nearest hundred.**

Estimation: \_\_\_\_\_\_\_\_

 Then **subtract** to find the **exact** value of 281 – 132

Exact value: \_\_\_\_\_\_\_\_

6. Note that the estimate in problem #5 was an **overestimate** of the exact value. Why do you think it was an overestimate? You may want to use the number line below to help your thinking.

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 **100** **132 281 300**

7. We saw in #1-3 above that when you estimate by rounding both numbers UP in a subtraction problem, sometimes you will get an overestimate and sometimes you will get an underestimate.

We also saw in #5-6 when you estimate by rounding the bigger number in a subtraction problem UP and the smaller number DOWN, you get an overestimate.

What do you think will happen if you round both numbers DOWN in a subtraction problem? Will you always get an overestimate, always get an underestimate, or will you sometimes get an overestimate and sometimes get an underestimate? Explain your thinking.

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8. What do you think will happen if you round the bigger number DOWN and the smaller number UP in a subtraction problem? Explain your thinking.

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