Name_____ Date_____

Rounding and Estimation

Rounding numbers makes numbers that are easier to work with. When numbers are rounded up or down, the numbers used are only approximates. They are not exact numbers. An exact number cannot generally be obtained using numbers that have been rounded. Rounding numbers will get an answer that is close, but not exact.

There are many ways of round numbers. You can round off to the nearest ten, the nearest whole number, the nearest first decimal, and so on.

Let's look at rounding off to the nearest ten first. If your number ends in 1 through 4, you would change the number into the next lowest number that ends in 0. For example, if you want to round off the number 63 to the nearest 10, you would round the number down to 60. If you number ends in 5 through 9, you would round up to the next ten. For example, 78 would round up to be 80.

If you are rounding based on whole numbers, you would look at the number after the decimal point. If that number is 1 through 4, you would round the number down. For example, 7.2 would be rounded down to the number 7. If your decimal is 5 through 9, then you would round up to the next number. For example, 11.7 would be rounded up to twelve.

There is a saying "0 through 4, keep it the same. 5 though 9, add 1." In other words, if your number after the decimal point is 0 through 4, you would keep the number before the decimal the same. If the number after the decimal point is 5 through 9, you would add 1 to the number in front of the decimal point. Let's look at a few more examples:

12.4 would round down to 12

17.8 would round up to 18

Rounding up or down can be done on any level. You can round off at the second decimal point instead. For example, 2.349 would become 2.35 if we were rounding to the second decimal point.

Rounding numbers can be used in what is called estimation. Sometimes, this can be referred to as front end estimation. When estimating, we round off the numbers in our mathematical problem prior to adding or subtracting them. For example, if we wanted to estimate 704 + 898, we could round off our numbers to the nearest hundred and say 700 + 900. We would then get the answer of 1600. This answer is an estimate. It is not the exact number. We know that if we added the exact numbers our answer would be 1602. As we can see, our estimation is close, but not exact. When estimating, some estimates will be closer to the exact number than others.

Estimation is useful because it allows us to more quickly calculate answers, especially with bigger or more difficult numbers.

Name_____ Date_____

Rounding and Estimation Questions

Please round off to the first decimal point:

1. 2.34

   _____

2. 1.51

   _____

3. 3.47

   _____

4. 6.18

   _____

5. .01

   _____

6. .09

   _____

Please round off to the nearest ten:

7. 75

   _____

8. 63

   _____

9. 44

   _____

10. 26

    _____

Please round off to the nearest whole number:

11. 18.4

    _____

12. 98.7

    _____

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Rounding and Estimation Answers

Please round off to the first decimal point:

9. 2.34
   2.3
10. 1.51
   1.5
11. 3.47
   3.5
12. 6.18
   6.2
13. .01
   .0
14. .09
   .1

Please round off to the nearest ten:

15. 75
   80
16. 63
   60
9. 44
   40
10. 26
   30

Please round off to the nearest whole number:

11. 18.4
   18
12. 98.7
   99