Fraction, Decimal, Percent Patterns

1/2 = _____ = _____%

1/3 = _____ = _____%

2/3 = _____ = _____%

1/4 = _____ = _____%

2/4 = _____ = _____%

3/4 = _____ = _____%

1/5 = _____ = _____%

2/5 = _____ = _____%

3/5 = _____ = _____%

4/5 = _____ = _____%

1/6 = _____ = _____ %

5/6 = _____ = _____ %

1/7 = _____ = _____ %

2/7 = _____ = _____ %

3/7 = _____ = _____ %

4/7 = _____ = _____ %

1/8 = _____ = _____%

2/8 = _____ = _____%

3/8 = _____ = _____%

4/8 = _____ = _____%

5/8 = _____ = _____%

6/8 = _____ = _____%

7/8 = _____ = _____%

1/9 = _____ = _____%

2/9 = _____ = _____%

3/9 = _____ = _____%

4/9 = _____ = _____%

5/9 = _____ = _____%

6/9 = _____ = _____%

7/9 = _____ = _____%

8/9 = _____ = _____%

5/7 = _____ = _____ %

6/7 = _____ = _____ %

1/10 = _____ = _____%

2/10 = _____ = _____%

3/10 = _____ = _____%

4/10 = _____ = _____%

5/10 = _____ = _____%

6/10 = _____ = _____%

7/10 = _____ = _____%

8/10 = _____ = _____%

9/10 = _____ = _____%

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Do Now

The following slides replace pages 149-150 in the reader: Multiplying Decimals

1. Multiply the numbers just as if they were whole numbers.

- Line up the numbers on the right - **do not align the decimal points**.
- Starting on the right, multiply each digit in the top number by each digit in the bottom number, just as with whole numbers.
- Add the products.

2. Place the decimal point in the answer by starting at the right and moving a number of places equal to the sum of the decimal places in both numbers multiplied.

Multiply decimals (continued)

- ***Example***
- 37.7 x 2.8 = ? --->
- 37.7 (1 decimal place)
  x 2.8 (1 decimal place)
  3016
  +754
  105.56 (2 decimal places, move point 2 places left)
- **Hint:** Use estimating to help you check the placement of the decimal point. You could round 37.7 to 40 and 2.8 to 3. It's easy to multiply 3 x 40 so you know your answer should be close to 120.
- Here's a "mental math" shortcut: When multiplying a number by a multiple of ten, just move the decimal point one space to the right for every zero.
- 10 x 0.6284 = 6.284 (1 zero, 1 space right)
  100 x 0.6284 = 62.84 (2 zeroes, 2 spaces right)
  1000 x 0.6284 = 628.4 (3 zeroes, 3 spaces right)
  10,000 x 0.6284 = 6284 (4 zeroes, 4 spaces right)
  100,000 x 0.6284 = 62,840 (5 zeroes, 5 spaces right)

Multiply Decimals

- ***Example 2***
- Find the product of **9.683 x 6.1 = ?**
- Line up the numbers on the right, multiply each digit in the top number by the each digit in the bottom number (like whole numbers), add the products, and mark off decimal places equal to the sum of the decimal places in the numbers being multiplied.
- 9.683 (3 decimal places)
  x 6.1 (1 decimal place)
  9683 (1 x 9683)
  +58098 (6 x 96830)
  59.0663 (3 + 1 = 4 decimal places)

Multiply decimals (continued)

Example 3)

Jackie just bought a new convertible. How far will she get on the highway before she runs out of gas and has to call a tow truck? First, estimate your answer to the tens place. Then make an exact calculation, using the calculator.

→Estimate:

- 24.5 -> 20 15.2 -> 20 20 x 20 = 400 miles

→Exact calculation:

24.5 x 15.2 = 372.40

- You can drop the trailing zero in a decimal number. For example, 372.40 is the same as 372.4. This is because the ".40" part of the number is the same as ".4". This is the same as saying that 40/100 is the same as 4/10.

Note: The following slides replace pages 153-154 in the reader: Dividing Decimals

- To divide decimal numbers:
- If the divisor is not a whole number, move decimal point to right to make it a whole number and move decimal point in dividend the same number of places.

- Divide as usual. Keep dividing until the answer terminates or repeats.

- Put decimal point directly above decimal point in the dividend.

- Check your answer. Multiply quotient by divisor. Does it equal the dividend?
- Example: 3.8 /1614.62

Check: Use rounding and estimating…Think: 4/1614

Dividing Decimals (continued)

- Dividing is the most challenging of our four basic operations. In fact, you have to use subtraction and multiplication in order to divide, and you also have to be pretty good at rounding and estimating! Many students have trouble with division, perhaps because most problems don't come out nice and even--you really have to use your mental muscle when dividing. Fortunately, we have calculators to make the job easier--but that doesn't mean you shouldn't learn how to do it yourself! It's easy to push a wrong button on the calculator, and you always need to know when the answer it's giving is reasonable.

  Dividing decimals is almost the same as dividing whole numbers, except you use the position of the decimal point in the dividend to determine the decimal places in the result.
- To divide decimal numbers:
- If the divisor is not a whole number:
- Move the decimal point in the divisor all the way to the right (to make it a whole number).
- Move the decimal point in the dividend the same number of places.
- Divide as usual. If the divisor doesn't go into the dividend evenly, add zeroes to the right of the last digit in the dividend and keep dividing until it comes out evenly or a repeating pattern shows up.
- Position the decimal point in the result directly above the decimal point in the dividend. [Show Me. Show and highlight the decimal point in the quotient, between the 4 and 9]
- Check your answer: Use the calculator and multiply the quotient by the divisor. Does it equal the dividend?
- Let's work through an example.

Dividing Decimals (Continued)

- Find this quotient: 16.9/ 6.9
- First show the division like this:
- Now move the decimal point one place to the right, which makes the divisor a whole number. Also move the decimal point in the dividend one place to the right:
- Divide as whole numbers. 65 goes into 169 two times with 39 left over:
- To continue dividing, add a zero to the right of the decimal point in the dividend. Then bring down the zero, and add it to the end of 39, making it 390
- 65 goes into 390 six times. We write a 6 above the zero in the quotient and put the decimal point just above the decimal point in the dividend:
- To check our answer, we multiply the quotient by the divisor and make sure it equals the dividend:
- Now You Try: Find the quotient of 55.318/3.4

Homework Due April 3

Math III

Pages 152 (#4-6), page 155 (#1-3,5-6), page 157-158 (all) and page 159-160 (all)

Math IV

Pages 152 (#4-6), page 155 (#1-3,5-6), page 157-158 (all) and page 159-160 (all)

Four Decimal Worksheets in the Reader: After page 158:

i) Multiplying Decimals worksheet;

ii) Dividing Decimals;

iii) Mixed practice with Decimals;

iv)Problem Solving with Decimals;