math Antics Worksheets

Name: _____

Date: _____

Converting Any Fraction to a Decimal (by Dividing)

F-CAF 1

Instructions: Use 'decimal division' to convert these fractions into decimal values. These all have non-repeating digits. Be sure to show your work!

1 $\frac{2}{5} = 0.4$

$$\begin{array}{r} 0.4 \\ 5\overline{)2.0} \\ -\,2\,0 \\ \hline 0 \end{array}$$

2 $\frac{1}{4} = 0.25$

$$\begin{array}{r} 0.25 \\ 4\overline{)1.00} \\ -\;\;8 \\ \hline 20 \\ -\,20 \\ \hline 0 \end{array}$$

3 $\frac{3}{4} = 0.75$

$$\begin{array}{r} 0.75 \\ 4\overline{)3.00} \\ -\,2\,8 \\ \hline 20 \\ -\,20 \\ \hline 0 \end{array}$$

4 $\frac{3}{8} = 0.375$

$$\begin{array}{r} 0.375 \\ 8\overline{)3.000} \\ -\,24 \\ \hline 60 \\ -\,56 \\ \hline 40 \\ -\,40 \\ \hline 0 \end{array}$$

5 $\frac{1}{8} = 0.125$

$$\begin{array}{r} 0.125 \\ 8\overline{)1.000} \\ -\;\;8 \\ \hline 20 \\ -\,16 \\ \hline 40 \\ -\,40 \\ \hline 0 \end{array}$$

6 $\frac{5}{8} = 0.625$

$$\begin{array}{r} 0.625 \\ 8\overline{)5.000} \\ -\,48 \\ \hline 20 \\ -\,16 \\ \hline 40 \\ -\,40 \\ \hline 0 \end{array}$$

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Repeating Decimals from Fractions

F-CAF 2

Instructions: Use 'decimal division' to convert these fractions into decimal values. These all have repeating digits. Be sure to show your work!

Example $\frac{1}{6} = 0.1\overline{6}$

$$\begin{array}{r} 0.166 \\ 6\overline{)1.000} \\ -\ 6 \\ \hline 40 \\ -\ 36 \\ \hline 40 \\ -\ 36 \\ \hline 4 \end{array}$$

same pattern in division means a repeating decimal

1 $\frac{1}{9} = 0.\overline{1}$

$$\begin{array}{r} 0.11 \\ 9\overline{)1.00} \\ -\ 9 \\ \hline 10 \\ -\ 9 \\ \hline 1 \end{array}$$

2 $\frac{5}{9} = 0.\overline{5}$

$$\begin{array}{r} 0.55 \\ 9\overline{)5.00} \\ -\ 45 \\ \hline 50 \\ -\ 45 \\ \hline 5 \end{array}$$

3 $\frac{5}{12} = 0.41\overline{6}$

$$\begin{array}{r} 0.4166 \\ 12\overline{)5.0000} \\ -\ 48 \\ \hline 20 \\ -\ 12 \\ \hline 80 \\ -\ 72 \\ \hline 80 \\ -\ 72 \\ \hline 8 \end{array}$$

4 $\frac{3}{11} = 0.\overline{27}$

$$\begin{array}{r} 0.2727 \\ 11\overline{)3.0000} \\ -\ 22 \\ \hline 80 \\ -\ 77 \\ \hline 30 \\ -\ 22 \\ \hline 80 \\ -\ 77 \\ \hline 3 \end{array}$$

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Long Repeating Decimals from Fractions

F-CAF 3

Instructions: Use 'decimal division' to convert these fractions into decimal values. These all have long decimal parts, so **round off** to **three** decimal places. Be sure to show your work!

Example $\frac{1}{7} = 0.143$

```
  0.1428
7 1.0000
- 7
  30
- 28
   20
- 14
    60
    56
```

let's just stop here and round off our answer

1 $\frac{3}{7} = 0.429$

```
  0.4285
7 3.0000
- 28
   20
- 14
    60
- 56
    40
- 35
     5
```

2 $\frac{6}{7} = 0.857$

```
  0.8571
7 6.0000
- 56
   40
- 35
    50
- 49
    10
-  7
     3
```

3 $\frac{5}{13} = 0.385$

```
   0.3846
13 5.0000
- 39
   110
- 104
     60
-  52
     80
-  78
      2
```

4 $\frac{2}{17} = 0.118$

```
   0.1176
17 2.0000
- 17
   30
- 17
   130
- 119
    110
-  102
      8
```

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Converting with a Calculator

F-CAF 4

Instructions: The following fractions have been converted to decimals with a calculator. Round the answers off to **three** decimal places or use the repeat symbol to shorten the answer if you see a repeating pattern.

1. $\frac{2}{7} = 0.2857142... =$ 0.286
2. $\frac{7}{9} = 0.7777777... =$ $0.\overline{7}$
3. $\frac{15}{21} = 0.7142857... =$ 0.714
4. $\frac{19}{33} = 0.5757575... =$ $0.\overline{57}$
5. $\frac{9}{14} = 0.6428571... =$ 0.643
6. $\frac{9}{23} = 0.3913043... =$ 0.391
7. $\frac{8}{11} = 0.7272727... =$ $0.\overline{72}$
8. $\frac{6}{19} = 0.3157894... =$ 0.316
9. $\frac{7}{22} = 0.3181818... =$ $0.3\overline{18}$
10. $\frac{11}{12} = 0.9166666... =$ $0.91\overline{6}$

Instructions: Use a calculator to convert these fractions to decimals. Round off to **three** decimal places or use the repeat symbol if you see a repeating pattern.

1. $\frac{4}{7} =$ 0.571
2. $\frac{12}{17} =$ 0.706
3. $\frac{12}{13} =$ 0.923
4. $\frac{15}{22} =$ $0.68\overline{1}$
5. $\frac{10}{11} =$ $0.\overline{90}$
6. $\frac{3}{13} =$ 0.231
7. $\frac{16}{31} =$ 0.516
8. $\frac{4}{3} =$ $1.\overline{3}$