Grade 8 Long Division With Decimals

Name: _____

As we build on the process of Long Division (D M S B), it does not change for mor complicated numbers. When we introduce decimals, there is no need to be scared or mathematically intimidated. There is an easy fix. First, you should know what each number is called. Remember that the answer is called the 'QUOTIENT' – the other two numbers each have a name – one is the dividend (the one that is being divided) and the other is the divisor (the one doing the dividing).

Example: $3136 \div 0.4$

(Dividend) (Divisor)

$$\frac{3136}{0.4} = \frac{31360}{4}$$

Re-write the question: $0.4\overline{)3136}$

(Divisor) (Dividend)

$$4\overline{)31360}$$

So, the way we make this simpler is to shift the decimal in the divisor to the right by one decimal place. This is essentially multiplying it by 10. In order for that to not affect the answer, you MUST shift the decimal on the dividend – essentially multiplying that by 10 also. Since both are multiplied by 10, the answer will not change – it is an equivalent number.

By shifting the decimal in the divisor, we eliminate the confusion of the decimal and the answer is easier to find.

$3136 \div 0.8 \rightarrow$ $0.8\overline{)31360} \rightarrow 8\overline{)31360}$

3795

24↓

63

56↓

76

72

40

Answer is 3795

$316 \div 0.02 \rightarrow$ $0.02\overline{)316} \rightarrow 2\overline{)31600}$

15800

2↓

11

10↓

16

16↓

00

0↓

00

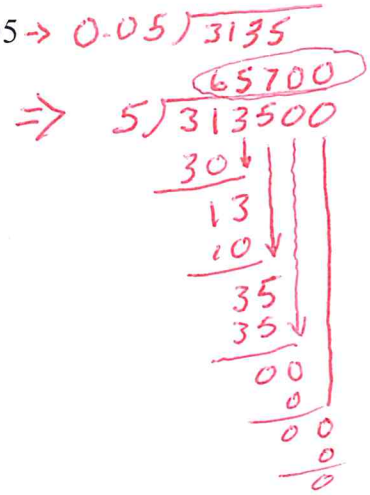
0

0

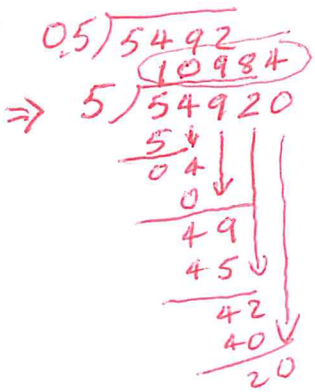
Answer 15800

Try these too

3135 ÷ 0.05 → 0.05)3135 ⇒ 65700 ⇒ 5)313500



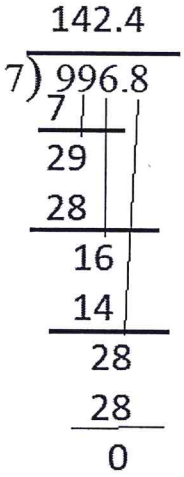
5492 ÷ 0.5 → 0.5)5492 ⇒ 10984 ⇒ 5)54920



Now, what happens when the decimal is in the Dividend like in the following:

$$7\overline{)\,996.8}$$

In this case, you are to do nothing but pop the decimal up into the area for the quotient and then proceed as usual – D M S B.

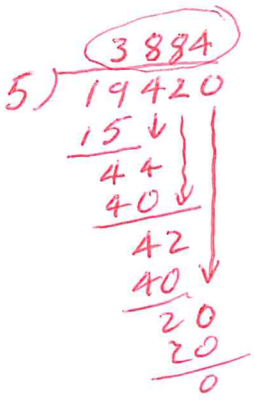


So, the answer (quotient) is 142.4.

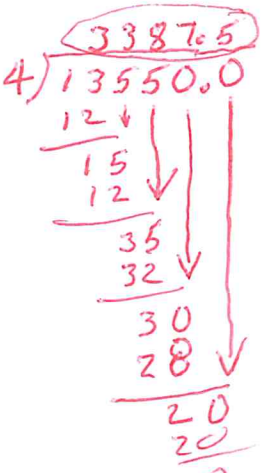
So, to make decimals easier, if the decimal is in the divisor, shift the decimal to get a whole number and then do the same with the dividend (both numbers). Do that first. If the decimal is in the dividend, or ends up in the dividend, just pop it up into the quotient or answer line. – Don't sweat the decimals in division.

Grade 8 Long Division With Decimals Practice

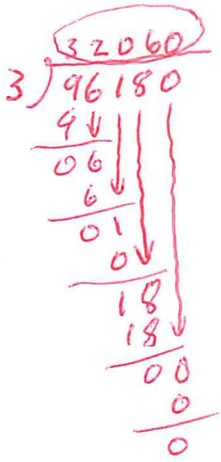
$0.5\overline{)1942}$



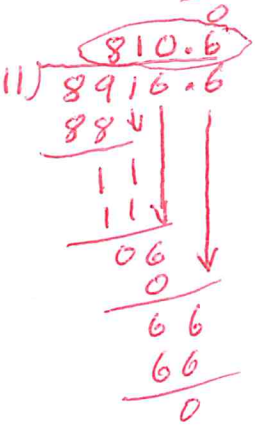
$0.4\overline{)1355}$



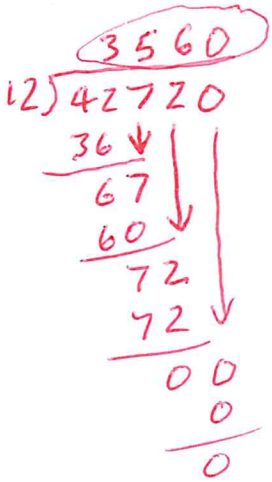
$0.3\overline{)9618}$



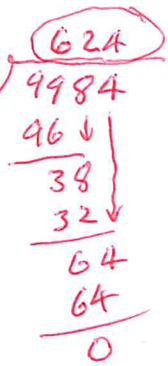
$1.1\overline{)891.66}$



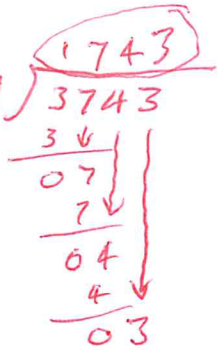
$1.2\overline{)4272}$



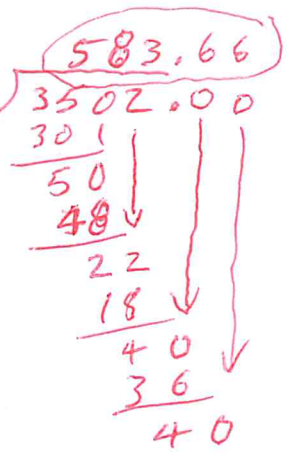
$1.6\overline{)998.4}$



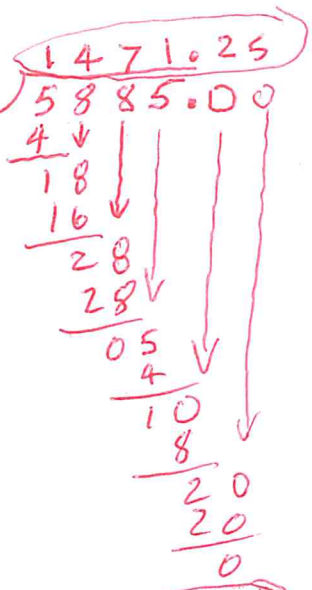
$0.01\overline{)37.43} \rightarrow 1\overline{)3743}$ → 1743



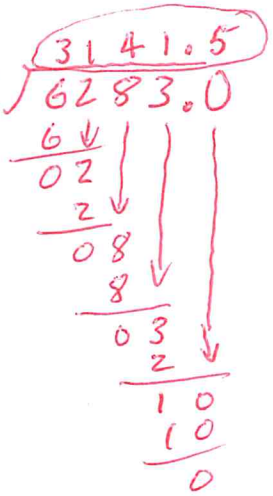
$0.6\overline{)350.2} \rightarrow 6\overline{)3502.00}$ → 583.66



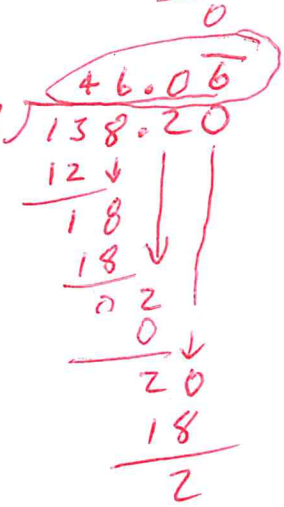
$0.4\overline{)588.5} \rightarrow 4\overline{)5885.00}$ → 1471.25



$0.2\overline{)628.3} \rightarrow 2\overline{)6283.0}$ → 3141.5



$0.3\overline{)13.82} \rightarrow 3\overline{)138.20}$ → $46.0\overline{6}$



$0.2\overline{)863.1} \rightarrow 2\overline{)8631.0}$ → 4315.5