Dividing a Decimal by a Decimal

When you divide by a decimal, you need to rewrite the dividend and the divisor so that you are dividing by a whole number.

Find 4.96 ÷ 0.8.

Step 1: Estimate. Use compatible numbers.

Step 2: Make the divisor a whole number. Multiply the divisor AND the dividend by the same power of 10.

Place the decimal point in the quotient.

Step 3: Divide as you would with whole numbers. Remember that sometimes you may need to annex zeros to complete your division.

Step 4: Compare the quotient with your estimate.

$480 \div 80 = 6$

$0.8\overline{)4.96}$

0.8 × 10 = 8
4.96 × 10 = 49.6

$$8\overline{)49.6} \longrightarrow \begin{array}{r} 6.2 \\ 8\overline{)49.6} \\ \underline{48} \\ 16 \\ \underline{16} \\ 0 \end{array}$$

Because 6.2 is close to 6, the answer checks.

Find each quotient.

1. $0.02\overline{)1.5}$ Estimate: _____

Multiply dividend and divisor by what power of 10? _____

Place the decimal point in the quotient.

Divide. How many zeros do you need to annex? _____

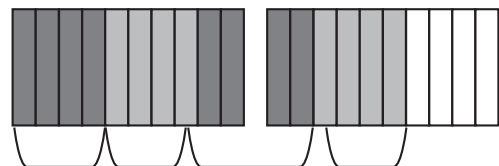Compare the quotient to your estimate.
Is the answer reasonable? _____

2. $0.06\overline{)0.36}$ **3.** $0.04\overline{)9.6}$ **4.** $0.75\overline{)0.03}$

5. Fernando used tenths grids to draw this picture showing 1.6 ÷ 0.4 = 4. Draw a picture to show 1.8 ÷ 0.6. Write the quotient.

Dividing a Decimal by a Decimal

Find each quotient.

1. 8.4 ÷ 0.03 = _____

2. 66.15 ÷ 0.063 = _____

3. 100.5 ÷ 1.5 = _____

4. 860 ÷ 0.04 = _____

5. 72.8 ÷ 10.4 = _____

6. 14.36 ÷ 0.04 = _____

7. 2.87 ÷ 0.1 = _____

8. 78.2 ÷ 0.2 = _____

9. How does multiplying both the dividend and the divisor by a factor of 10 sometimes make a problem easier to solve?

_____

_____

For each item, find how many times greater the 2011 cost is than the 1955 cost. Round your answer to the nearest hundredth.

Item	1955 Cost	2011 Cost
Movie admission	$0.75	$9.50
Regular popcorn	$0.25	$4.25
Regular drink	$0.35	$2.75

10. movie admission

11. regular popcorn

12. regular drink

_____   _____   _____

13. Which item has increased the greatest amount of times from its original cost?   _____

14. Divide. Round to the nearest hundredth. 250.6 ÷ 1.6

A 156   **B** 156.6   **C** 156.61   **D** 156.63

15. Allison and Rhea got different quotients when they divided 4.80 by 0.12. Whose work is correct? Explain why.

Allison

$$\frac{0.40}{12)4.80}$$

Rhea

$$\frac{40.0}{12)480}$$

_____

_____