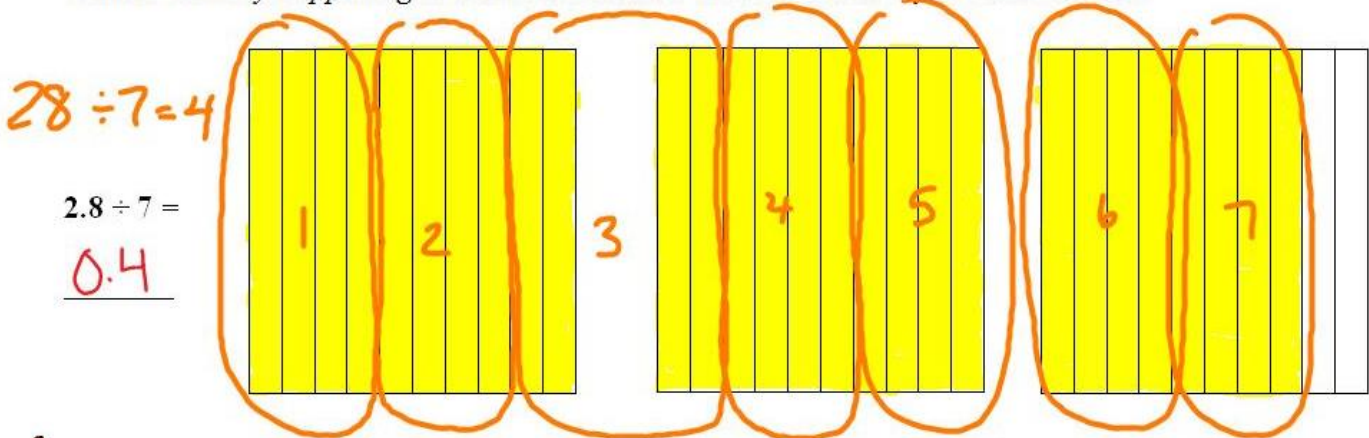


Dividing Decimal Numbers by Whole Numbers

What is actually happening to a decimal number when we divide by a whole number?



When you have a *decimal number* as your *dividend*, place a *decimal point* in the *quotient* directly above the *decimal point* in the *dividend*. Then, *divide* as if you were *dividing whole numbers*!

Example 1: Divide $42.78 \div 6$.

Example 2: Divide $11.466 \div 18$

Example 3: Divide $6230.4 \div 132$.

47.2

$\begin{array}{r} \times 7.13 \\ 6 \overline{) 42.78} \\ \underline{-42} \\ 07 \\ \underline{-6} \\ 18 \\ \underline{-18} \\ 0 \end{array}$ <p><u>7.13</u></p>	$\begin{array}{r} \times 0.637 \\ 18 \overline{) 11.466} \\ \underline{-108} \\ 4 \\ \times 5 \\ \underline{90} \\ 18 \\ \underline{18} \\ 0 \end{array}$ <p><u>0.637</u></p>	$\begin{array}{r} \times 47.2 \\ 132 \overline{) 6230.4} \\ \underline{-528} \\ 950 \\ \underline{-924} \\ 264 \\ \underline{-264} \\ 0 \end{array}$ <p><u>47.2</u></p>
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Example 4:

Ms. Maynes spent \$13.50 buying her class 30 ice cream bars. How much did each ice cream bar cost?



\$0.45

$$\begin{array}{r} \times 0.45 \\ 30 \overline{) 13.50} \\ \underline{-120} \\ 150 \\ \underline{-150} \\ 0 \end{array}$$

What do we do if we have a remainder?

≈ 0.2

Divide. Round your answer to the nearest tenth if necessary.

Example 5: $67 \div 4 \approx 16.8$

Example 6: $4.3 \div 25 = .172$

Just add a decimal point (if necessary) and as many zeros as needed after it so that you don't have a remainder in your final

Handwritten long division for Example 5: $4 \overline{)67.00}$. The quotient is 16.75. The steps show subtracting 4 from 6 to get 2, then 27 from 27 to get 0, then 30 from 30 to get 0, then 28 from 30 to get 2, then 20 from 20 to get 0, and finally 20 from 20 to get 0.

Handwritten long division for Example 6: $25 \overline{)4.300}$. The quotient is .172. The steps show subtracting 25 from 43 to get 18, then 180 from 180 to get 0, then 50 from 50 to get 0, and finally 50 from 50 to get 0.

Example 7: $7485 \div 12 \approx 623.8$

Example 8: $9126 \div 390 = 23.4$



Handwritten long division for Example 7: $12 \overline{)7485.00}$. The quotient is 623.75. The steps show subtracting 72 from 74 to get 2, then 28 from 28 to get 0, then 24 from 24 to get 0, then 45 from 45 to get 0, then 36 from 45 to get 9, then 84 from 90 to get 6, and finally 60 from 60 to get 0.

Handwritten long division for Example 8: $390 \overline{)9126.0}$. The quotient is 23.4. The steps show subtracting 780 from 912 to get 132, then 1170 from 1326 to get 156, then 1560 from 1560 to get 0.

Example 9: Bob D. Builder will stain the deck in his backyard. The deck has an area of 752.4 square feet. If the deck is 33 feet long, how wide is it?

22.8ft

Handwritten long division for Example 9: $33 \overline{)752.4}$. The quotient is 22.8. The steps show subtracting 66 from 75 to get 9, then 92 from 92 to get 0, then 66 from 66 to get 0, then 264 from 264 to get 0, and finally 264 from 264 to get 0.