

9 Dividing Decimals

To divide two decimals, use the following steps.

- If necessary, change the divisor to a whole number by moving the decimal point to the right. **You are multiplying the divisor by a power of ten.**
- Move the decimal point in the dividend the same number of places to the right. **You are multiplying the dividend by the same power of ten.**
- Divide as with whole numbers.

EXAMPLES Divide Decimals

Divide.

1 $25.8 \div 2$ **Estimate** $26 \div 2 = 13$

$$\begin{array}{r} 12.9 \\ 2 \overline{)25.8} \\ - 2 \\ \hline 5 \\ - 4 \\ \hline 18 \\ - 18 \\ \hline 0 \end{array}$$

The divisor, 2, is already a whole number, so you do not need to move the decimal point.

Divide as with whole numbers. Then place the decimal point directly above the decimal point in the dividend.

Compared to the estimate, the quotient, 12.9, is reasonable.

2 $199.68 \div 9.6$ **Estimate** $200 \div 10 = 20$

$$\begin{array}{r} 20.8 \\ 9.6 \overline{)199.68} \\ - 192 \\ \hline 768 \\ - 768 \\ \hline 0 \end{array}$$

Move each decimal point one place to the right.

Compare the answer to the estimate.

Exercises

Divide.

- | | | | | |
|------------------------------|------------------------------|-----------------------------|------------------------------|------------------------------|
| 1. $0.3 \overline{)9.81}$ | 2. $12 \overline{)0.12}$ | 3. $3.2 \overline{)5.76}$ | 4. $0.22 \overline{)0.0132}$ | 5. $0.04 \overline{)0.008}$ |
| 6. $3.18 \overline{)0.636}$ | 7. $0.2 \overline{)8.24}$ | 8. $82.3 \overline{)823}$ | 9. $12.02 \overline{)24.04}$ | 10. $0.5 \overline{)85}$ |
| 11. $74.9 \overline{)5.992}$ | 12. $19.2 \overline{)4.416}$ | 13. $1.9 \overline{)38.57}$ | 14. $13.8 \overline{)131.1}$ | 15. $6.48 \overline{)259.2}$ |
| 16. $812 \div 0.4$ | 17. $0.34 \div 0.2$ | 18. $14.4 \div 0.12$ | 19. $90.175 \div 2.5$ | |
| 20. $39.95 \div 799$ | 21. $88.8 \div 444$ | 22. $613.8 \div 66$ | 23. $2,445.3 \div 33$ | |
| 24. $20.24 \div 2.3$ | 25. $45 \div 0.09$ | 26. $2.475 \div 0.03$ | 27. $4.6848 \div 0.366$ | |
| 28. $180 \div 0.36$ | 29. $97.812 \div 1.1$ | 30. $23 \div 0.023$ | 31. $1,680.042 \div 44.2$ | |

32. **OLYMPICS** In the 2000 Olympics, Michael Johnson of the U.S. ran the 400-meter run in 43.84 seconds. To the nearest hundredth, find his speed in meters per second.

33. **PLANETS** It takes Pluto 247.69 Earth years to revolve once around the Sun. It takes Jupiter 11.86 Earth years to revolve once around the Sun. About how many times longer does it take Pluto than Jupiter to revolve once around the Sun?

10 M

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To write a

- Multipl
- Add th
- Write t

EXAM

Write

1 $6\frac{1}{2}$
 $6\frac{1}{2} =$
 $=$

To write the deno

EXA

3 Write
 $7 \div$

So, $\frac{7}{4}$

Exercise

Write ea

- $2\frac{1}{3}$
- $1\frac{1}{10}$
- $2\frac{3}{8}$

Write ea

- $\frac{15}{2}$
- $\frac{3}{3}$
- $\frac{5}{3}$