

Estimating with Decimals

 (pages 50–53)

When you work with decimals, you can use rounding to estimate sums, differences, products, or quotients.

Estimate by Rounding	You can round the decimals you are working with to the same place-value position and then add, subtract, multiply, or divide. When estimating a product or quotient, round to place-value positions that are easy to multiply or divide.
Estimate by Clustering	You can use clustering to estimate sums if all of the decimals you are adding seem to be clustered around a common quantity.

EXAMPLES

A Estimate 26.8×3.6 .

Round 26.8 to 30 because 30 is an easy factor to multiply. Round 3.6 to 4, which is the nearest whole number.

$30 \times 4 = 120$ The product is about 120.

B Estimate $7.234 + 6.985 + 7.158$.

Use clustering to estimate because all of the decimal addends cluster around 7. Round each addend to 7. There are three numbers.

So, the sum is about 7×3 , or 21.

Try These Together

1. Estimate $277 \div 6.8$.

HINT: Round the dividend and divisor to numbers that can be easily divided.

2. Estimate $3.2 + 2.7 + 2.9 + 3.3 + 3.1$.

HINT: The addends cluster around what number?

PRACTICE

Estimate by rounding.

3. $5.1 \overline{)25.4}$

4. $\begin{array}{r} 2.6 \\ \times 3.4 \\ \hline \end{array}$

5. $\begin{array}{r} 5.8 \\ + 4.5 \\ \hline \end{array}$

6. $\begin{array}{r} 9.9 \\ - 8.1 \\ \hline \end{array}$

7. $\begin{array}{r} 6.1 \\ + 8.3 \\ \hline \end{array}$

8. $\begin{array}{r} 15.34 \\ - 12.86 \\ \hline \end{array}$

9. $3.9 \overline{)28.3}$

10. $\begin{array}{r} 10.21 \\ \times 3.48 \\ \hline \end{array}$

Estimate by clustering.

11. $\begin{array}{r} 4.9 \\ 5.3 \\ + 5.2 \\ \hline \end{array}$

12. $\begin{array}{r} 12.6 \\ 13.1 \\ + 12.9 \\ \hline \end{array}$

13. $\begin{array}{r} 0.95 \\ 1.06 \\ + 1.11 \\ \hline \end{array}$

14. $\begin{array}{r} 15.5 \\ 14.8 \\ + 15.3 \\ \hline \end{array}$

15. **Shopping** Alena bought a pair of shoes for \$19.79 and a shirt for \$12.64. Estimate how much money she spent.



16. **Standardized Test Practice** The three chimpanzees in a zoo weigh 78.5, 81.25, and 79.75 pounds. Estimate the sum of the weights of the three chimpanzees.

A 80 pounds

B 200 pounds

C 240 pounds

D 300 pounds

Answers: 1–15. Sample answers are given. 1. 40 2. 15 3. 5 4. 9 5. 10 or 11 6. 2 7. 14 8. 2 9. 7 10. 30 or 35 11. 15 12. 39 13. 3 14. 45 15. \$33 16. C