

Estimating Products and Quotients of Decimals

You can use rounding to estimate products and quotients of decimals.

EXAMPLE

1 Estimate each product or quotient to the nearest whole number.

a. 3.8×2.1

$$3.8 \times 2.1 \rightarrow 4 \times 2 = 8 \quad \text{Round 3.8 to 4 and round 2.1 to 2.}$$

3.8×2.1 is about 8.

b. $16.45 \div 3.92$

$$16.45 \div 3.92 \rightarrow 16 \div 4 = 4 \quad \text{Round 16.45 to 16 and round 3.92 to 4.}$$

$16.45 \div 3.92$ is about 4.

You can use mental math and compatible numbers to estimate products and quotients of decimals. **Compatible numbers** are rounded so it is easy to compute with them mentally.

EXAMPLE

2 Estimate each product or quotient to the nearest whole number.

a. 7×98.24

$$7 \times 98.24 \rightarrow 7 \times 100 = 700 \quad \text{Even though 98.24 rounds to 98, 100 is a compatible number because it is easy to mentally compute } 7 \times 100.$$

7×98.24 is about 700.

b. $47.5 \div 5.23$

$$47.5 \div 5.23 \rightarrow 48 \div 6 = 8 \quad \text{Even though 5.23 rounds to 5, 6 is a compatible number because 48 is divisible by 6.}$$

$47.5 \div 5.23$ is about 8.