2. **Find 0.112 × 7.2.**

Estimate 0.112 × 7.2 ≈ 0 × 7 or 0

0.112 has 3 decimal places.

7.2 has 1 decimal place.

So the product has 3 + 1, or 4 decimal places.

$$\begin{array}{r} 0.112 \\ \times \quad 7.2 \\ \hline 224 \\ +\ 784 \\ \hline 0.806\,4 \end{array}$$

placement of the decimal point is different. The product of 4.2×6.7 is 28.14 and the product of 42×67 is 2,814.

Show your work.

a. 15.96

b. 0.206

c. 0.0518

2. Find 0.112×7.2.

Estimate $0.112 \times 7.2 \approx$ 0 × 7 or 0

0.112 has 3 decimal places.

7.2 has 1 decimal place.

So the product has 3 + 1, or 4 decimal places.

$$\begin{array}{r} 0.112 \\ \times \quad 7.2 \\ \hline 224 \\ +\ 784 \\ \hline 0.8064 \end{array}$$

The product is 0.8064.

Check for reasonableness 0.8064 ≈ 0 ✓

Got it? Do these problems to find out.

a. 5.7×2.8 **b.** 4.12×0.05 **c.** 0.014×3.7

1. $0.6 \times 0.5 =$ 0.3

2. $27.43 \times 1.089 =$ 29.87127

3. $0.98 \times 7.3 =$ 7.154

4. $2.7 \times 1.35 =$ 3.645

5. $0.03 \times 0.09 =$ 0.0027

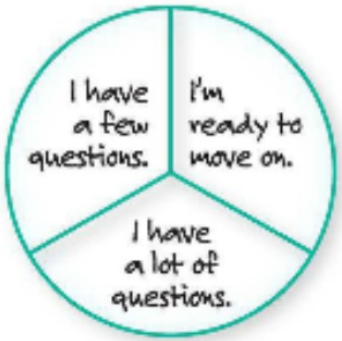
6. $0.04 \times 2.12 =$ 0.0848

7. A mile is equal to approximately 1.609 kilometers. How many kilometers is 2.5 miles? Justify your answer. (Example 5) 4.0225 km; $1.609 \times 2.5 \approx 1.5 \times 3 = 4.5$; $4.5 \approx 4.0225$

8. **Building on the Essential Question** Why is estimating not as helpful when multiplying very small numbers such as 0.007 and 0.053? Sample answer: Both numbers will round to 0. So, it will be difficult to know if you have multiplied correctly.

Rate Yourself!

Are you ready to move on? Shade the section that applies.



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Independent Practice

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Multiply. (Examples 1–4)

1. $0.7 \times 0.4 =$ **0.28**

Show your work

2. $0.4 \times 3.7 =$ **1.48**

3 **3.** $0.52 \times 2.1 =$ **1.092**

4. $6.2 \times 0.03 =$ **0.186**

5. $14.7 \times 11.361 =$ **167.0067**

6. $0.28 \times 0.08 =$ **0.0224**

7 **STEM** A giraffe can run up to 46.93 feet per second. How far could a giraffe run in 1.8 seconds? Justify your answer. (Example 5)

84.474 ft; $46.93 \times 1.8 \approx 45 \times 2 = 90$; $84.474 \approx 90$

8. A nutrition label indicates that one serving of apple crisp oatmeal has 2.5 grams of fat. How many grams of fat are there in 3.75 servings? Justify your answer. (Example 5)

9.375 g; $25 \times 375 = 9{,}375$, and there are 3 total decimal places, so the decimal point is placed 3 places from the right.

9 **Financial Literacy** Pears cost \$0.92 per pound and apples cost \$1.10 per pound. Mr. Bonilla bought 3.75 pounds of pears and 2.1 pounds of apples. How much did he pay for the pears and apples? Explain your answer.

\$5.76; Each price is about \$1. He bought about 6 pounds of fruit. $6 \times 1 = 6 \approx$ \$5.76

9 **Financial Literacy** Pears cost $0.92 per pound and apples cost $1.10 per pound. Mr. Bonilla bought 3.75 pounds of pears and 2.1 pounds of apples. How much did he pay for the pears and apples? Explain your answer.

$5.76; Each price is about $1. He bought about 6 pounds of fruit. $6 \times 1 = 6 \approx \$5.76$

Multiply.

10. $25.04 \times 3.005 =$ **75.2452**

11. $1.03 \times 1.005 =$ **1.03515**

12. $5.12 \times 4.001 =$ **20.48512**

13. STEM The table shows the approximate distance around Earth.

Location	Approximate Distance (mi)
around Earth at the equator	24,889.78
around Earth through the poles	24,805.94

a. About how many more miles would a satellite travel if it circled the equator 2.5 times than if it circled around the poles 2.5 times?

209.6 mi

b. The distance around Jupiter at the equator is about 17.6 times greater than the distance around Earth at the equator. About how many more miles would a satellite travel if it circled Jupiter's equator than if it circled Earth's equator? Round to the nearest tenth.

413,170.3 mi

H.O.T. Problems Higher Order Thinking

14. MP **Reason Abstractly** Write a multiplication problem in which the product is between 0.05 and 0.75. Sample answer: 0.1×0.6

15. **Justify Conclusions** Place the decimal point in the answer to make it correct. Explain your reasoning. $3.9853 \times 8.032856 = 32013341...$

32.013341...; Sample answer: 3.9853×8.032856 rounds to $4 \times 8 = 32$, so the answer must be about 32.

16. **Construct an Argument** Determine whether the following statement is *always*, *sometimes*, or *never* true. Give examples to justify your answer.

The product of two decimals less than 1 is less than either of the factors.

always; Sample answer: $0.3 \times 0.5 = 0.15$; $0.75 \times 0.6 = 0.45$

17. **Reason Inductively** Is the product of 0.4×1.8 greater than or less than 0.4? Explain your reasoning. **greater than 0.4; It is being multiplied by a decimal greater than 1.**

18. **Persevere with Problems** Evaluate the expression $0.3(3 - 0.5)$. **0.75**

19. **Model with Mathematics** Write a world problem in which you multiply two decimals. The product should be between 0 and 1.

Sample answer: Diego is growing plants from seeds. Each day, the plant grows 0.5 inch. How many inches tall is the plant after 1.5 days? 0.75 in.