Name _____

# Too Much Bread for My Bread? (Metric)

*A thinkLaw Math Lab*

**thinkStarter**

Imagine you are about to host a party.

You want to purchase a large sandwich for your guests. You go to a local deli where you see the following advertisement.

10-meter Sandwich
$100

But before you order, the shop owner claims there is a better deal.

> I have an even better deal. I will sell you an 8,000-milliimeter sandwich for $90.

Which is a better deal? Why?

_____

_____

_____

_____

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**thinkStarter Summary**

Understanding measurements is an important skill to make the best shopping decisions. In this thinkLaw math lab, we will work to determine the best deals.

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**What's the Best Deal?**

You need more than just a sandwich to have a great party. But you want to be smart with your money. Which option is the better deal?

| Sheet Cake | | |
|---|---|---|
| Cake 1<br><br>400-centimeter Cake<br>$28 | Cake 2<br><br>3-meter Cake<br>$30<br> | **Convert to the same unit.** |
| **Price Per Unit Cake 1:**<br>Price ÷ Units = Price Per Unit | | **Price Per Unit Cake 2:**<br>Price ÷ Units = Price Per Unit |

Which is the better deal?

- ☐ 400-centimeter cake for $28
- ☐ 3-meter cake for $30

| Fruit Tray | | |
|---|---|---|
| Tray 1<br><br>250-millimeter Tray<br>$50<br> | Tray 2<br><br>30-centimeter Tray<br>$55<br> | **Convert to the same unit.** |

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| **Price Per Unit Tray 1:**<br>Price ÷ Units = Price Per Unit | **Price Per Unit Tray 2:**<br>Price ÷ Units = Price Per Unit |
|---|---|

Which is the better deal?

- ☐ 250-millimeter Tray for $50
- ☐ 30-centimeter Tray for $55

| **Pretzels** | | |
|---|---|---|
| Bag 1<br>60-gram Bag<br>$9<br> | Bag 2<br>45,000-milligram Bag<br>$6<br> | **Convert to the same unit.** |
| **Price Per Unit Bag 1:**<br>Price ÷ Units = Price Per Unit | | **Price Per Unit Bag 2:**<br>Price ÷ Units = Price Per Unit |

Which is the better deal?

- ☐ 60-gram Bag for $9
- ☐ 4,500- milligram Bag for $6

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| Jellybeans | | |
|---|---|---|
| Box 1<br><br>4-kilogram Bag $18 | Box 2<br><br>5,000,000-milligram Bag $20 | **Convert to the same unit.** |
| **Price Per Unit Bag 1:**<br>Price ÷ Units = Price Per Unit | | **Price Per Unit Bag 2:**<br>Price ÷ Units = Price Per Unit |

Which is the better deal?

- ☐ 4-kilogram Bag for $18
- ☐ 5,000,000 milligram Bag for $20

| Sweet Tea | | |
|---|---|---|
| Bottle 1<br><br>5-liter Bottle $6 | Bottle 2<br><br>550-centiliter Bottle $5 | **Convert to the same unit.** |
| **Price Per Unit Bottle 1:**<br>Price ÷ Units = Price Per Unit | | **Price Per Unit Bottle 2:**<br>Price ÷ Units = Price Per Unit |

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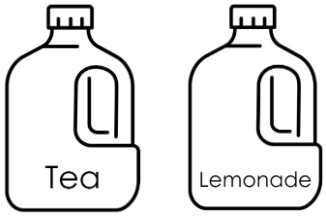
Which is the better deal?

- 5- liter Bottle for $6
- 550-centiliter Bottle for $5




| Lemonade | | |
|---|---|---|
| Bottle 1<br>8,000-milliliter Bottle<br>$10 | Bottle 1<br>2-liter Bottle<br>$2.50 | **Convert to the same unit.** |
| **Price Per Unit Bottle 1:**<br>Price ÷ Units = Price Per Unit | | **Price Per Unit Bottle 1:**<br>Price ÷ Units = Price Per Unit |

Which is the better deal?

- 8,000-milliliter Bottle for $10
- 2-liter Bottle for $1.50

What advice would you give someone about using the metric system?

**thinkBigger** (1999)

In the United States, we use the customary system of measurement. The **customary system** is complex. It has many different units of measurement that are not related to each other in a simple way. For example, there are 12 inches in 1 foot, 3 feet in 1 yard, and 1760 yards in 1 mile.

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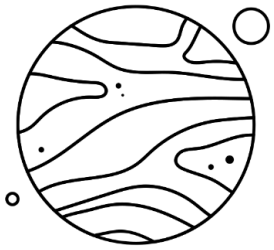
Most other countries use the metric system. The **metric system** is based on the decimal system. This means that all units of measurement are multiples of 10.



In 1998, NASA launched the Mars Climate Orbiter. The Mars Climate Orbiter was created to study the planet's climate, atmosphere, and surface changes. The spacecraft cost $125 million to make.

When the spacecraft was built by the company Lockheed Martin, the propulsion engineers used the customary system to measure the force.

However, the metric system is used in space travel. When NASA calculated the spacecraft's trajectory, they assumed the propulsion engineers had used the metric system.

The result was a disaster. The Mars Climate Orbiter flew too close to Mars. The heat from the planet's atmosphere disintegrated the spacecraft. **Disintegrated** means that it broke into millions of small pieces or particles.

Mixing up the customary system and the metric system was a $125 million dollar mistake! Who do you think made the *biggest* mistake?

Make the best argument that each party made the biggest mistake.

| The Propulsion Engineers | NASA |
|---|---|
| | |

Mistakes are always an opportunity to learn! What lessons do you think the engineers learned from this mistake? Why is that lesson important?

| Lesson Learned | Why is that Lesson Important? |
|---|---|
| | |

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