The Candy Shop

**O**

**nce upon a time** there was an older couple named Homer and Marge Simpson. They had been married for 15 years when Marge finally said to Homer, “Homey, you HAVE to get a good paying job soon! How will we ever put Bart through college with the money you make at the nuclear power plant?!” The Simpsons always seemed to be broke, but one day Homer had a brilliant idea. Homer loved to eat JellyBellies, but he thought they were too expensive and didn’t like their chewy consistency (they always get stuck in Bart’s braces). He liked hard candies better, but he had not found any that could beat the flavor of JellyBellies. Together with the local scientist, Mr. Wiz, they developed a hard candy with almost as much flavor as a JellyBelly. They decided to make their candies disk-shaped (i.e., Lifesavers without the hole).

**Uncle Wiz Retires!**

As fate would have it, the Simpsons’ elderly uncle retired and asked them to run his small candy and nut shop. Seeing this as a good sign, the Simpsons took over the business and soon started selling the Simpson’s succulent candies in the candy shop. They named their store, ***The Simpson’s Sweets Shop***.

The candies were an instant hit! Knowing that people are accustomed to buying candies in rolls-- like LifeSavers candies, they started to package their candies in rolls. They argued day and night about the number of candies that should be put in a roll.

**Drama, Drama!!!**

Well, the Simpsons could not come to any agreement about the number of pieces that they would put in a roll. Marge wanted to put 7 pieces in a roll of orange candy. Homer wanted to put 12 pieces in a roll of cherry candy. They did agree on one thing. If they put 10 orange candies in roll, ALL orange candy rolls would contain 10 pieces. However, they could put a different amount of candies in a Root Beer roll. But if they put 17 pieces in the Root Beer roll, ALL root beer rolls would have 17 pieces.

## Representing Candy in the Candy Shop

# Three rolls and 2 extra pieces of candy Three rolls and a roll missing 2 pieces or Four rolls less 2 pieces



**-2**

How many pieces are there altogether in each picture if…

Packing Rule Orange: 10 candies per roll

Packing Rule Rootbeer: 17 candies per roll

Packing Rule Grape: 53 candies per roll

Mrs. Simpson had the following amount of candy in the candy shop. How many pieces does she have in all?

**Packing Rule**

**Packing Rule**

**Packing Rule**

There are 30 pieces in each roll.

There are 13 pieces in each roll.

There are 5 pieces in each roll.

There are 30 pieces in each roll.

There are 13 pieces in each roll.

There are 5 pieces in each roll.

There are 30 pieces in each roll.

There are 13 pieces in each roll.

There are 5 pieces in each roll.

There are 30 pieces in each roll.

There are 13 pieces in each roll.

There are 5 pieces in each roll.

There are 30 pieces in each roll.

There are 13 pieces in each roll.

There are 5 pieces in each roll.



**-4**

There are 30 pieces in each roll.

There are 13 pieces in each roll.

There are 5 pieces in each roll.



**-2**

There are 30 pieces in each roll.

There are 13 pieces in each roll.

There are 5 pieces in each roll.



**-3**

There are 30 pieces in each roll.

There are 5 pieces in each roll.

There are 13 pieces in each roll.

Krazy Kustomer Chaos

Krusty the Clown came into the store and wanted to buy 95 pieces of strawberry candy. The packing rule for strawberry candies is 5 pieces per roll. Krusty knew that Homer was not the best math student and thought he could trick him into giving him extra candy. Krusty asked Homer to give him 10 wrapped rolls and 50 loose, unwrapped pieces and he would pay for 95 pieces. Is this fair? Explain.

1. What are 2 other ways to have 95 pieces of candy packaged, if there are 5 pieces per roll? Draw them below.
2. Draw 2 different ways that the following candies can be packaged if there are 6 pieces of candy per roll.
3. Draw 2 different ways that the following candies can be packaged if there are 7 pieces of candy per roll.



**-4**

1. Draw 2 different ways that the following candies can be packaged if there are 8 pieces of candy per roll.



**-5**

Mischievous Maggie and the Mystery Rolls

The Simpson’s Sweets Shop became one of the top candy stores in Springfield. However, the Simpsons’ daughter, Maggie, thought that she could make the Sweets Shop sell even more candy if she could come up with a clever promotion. She had a brilliant idea for a Mystery Candy Roll. The Sweets Shop would sell Mystery Rolls which were mysteries in two ways. First, the flavors hidden inside the Mystery Rolls were unknown. Second, each day the Sweets Shop packaged their candy, the packing rule could change.

**Mystery Roll Contest**

To make it interesting, Maggie decided that the packing rule for the Mystery Rolls would change each day and customers would not know how many candies were in the roll. The following advertisement appeared in the Sunday newspaper:

**Sunday’s Mystery Roll**

Each roll has exactly X pieces per roll!!!

The first person who can guess what X is will receive the roll for free.

X pieces inside

On other days, Maggie changed the packing rule.

Monday she changed the rule to Y pieces of candy per roll and customers had to figure out how many pieces of candy were in each roll.

On Tuesday, she said there were C candies per roll and so on.

Label It

Label each picture below using the given packing rule:

EXAMPLE

PACKING RULE: 3 pieces per roll.

3 3 3 1

1. PACKING RULE: 7 pieces per roll
2. PACKING RULE: 10 pieces per roll



**-4**

1. PACKING RULE: X pieces per roll
2. PACKING RULE: Y pieces per roll
3. PACKING RULE: W pieces per roll



**-1**

Mrs. Simpson had the following amount of candy in the candy shop. How many pieces does she have in all?

Packing Rules

M pieces

in each roll.

X pieces

in each roll

..

10 pieces

in each roll.

7 pieces

in each roll.



**-4**



**-2**



**-3**

On Tuesday Maggie starts packaging orders of Mystery Rolls for 7 customers and uses the packing rule of X pieces per roll. Her brother Bart steals her favorite calculator from her and runs outside the Sweet Shop, saying “I’m going to throw this in the river. Catch me if you can!” So, Maggie runs out of the store to get her calculator back. However, she left her customer’s candy on the table. Write an expression to represent the amount of candy that is on each table if the packing rule is X pieces per Mystery Roll?

Order 1.

Order 2.



**-4**

Order 3.



**-3**

Order 4.

Order 5.



**-4**

Order 6.



**-2**

Order 7.

Saturday Night Special

On Saturday, Maggie decided to run a special sale on cherry candies. The packing rule for this candy was C candies per roll.

Special Sale Today!!!

Get C + 4 candies for the cheap price of $1!!!

Sale is only good today!

1. How much total candy did each person order below? Write your answer as a picture or an expression.
2. Sideshow Bob ordered 4 specials.
3. Crazy Cat Lady ordered 3 special.
4. Selma ordered 6 specials.
5. Itchy ordered 10 specials.
6. Circle all of the expressions below that represent Sideshow Bob’s candy.

4c + 4 4c + 16 4(c + 4) 4c

More Specials

Draw a picture to represent the expression AND then write a different expression than given.

Monday Madness!!!

**Get X + 3 candies for the cheap price of $1!!!**

Sale is only good today!

Terrific Tuesday!!!

**Get R + 7 candies for the cheap price of $1!!!**

Sale is only good today!

1. 2(X + 3) B. 5(R +7)

Wicked Wednesday!!!

**Get H - 2 candies for the cheap price of $1!!!**

Sale is only good today!

Freaky Friday!!!

**Get 2F + 6 candies for the cheap price of $1!!!**

Sale is only good today!

1. 3(H - 2) D. 4(2F +6)
2. Simplifying Expressions

Simplify each expression below. Draw pictures, if necessary.

1. 2(x + 4)
2. 3(2x + 1)
3. 3(c – 1)
4. 2(T - 5)
5. 4(6T + 12)
6. 4(2T – 3)
7. 4(2W – 5)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Packing Rule** | **On the shelf** | **Simpsons Make** | **Picture-Pieces in all** | **Number-**  **pieces in all** |
| **X=15** |  |  |  |  |
| **Y=7** |  | **-4** |  |  |
| **W=3** |  |  |  |  |
| **C=?** |  | **-3** |  | **45** |
| **V=?** | **-4** |  |  | **82** |

?

?



**-4**

1. 2. 3.

|  |  |
| --- | --- |
| Number of pieces per roll | Total number of  pieces |
| 6 |  |
| 8 |  |
| 10 |  |
| 12 |  |
| R | 2R - 4 |

|  |  |
| --- | --- |
| Number of pieces per roll | Total number of  pieces |
| 5 |  |
| 7 |  |
| 9 |  |
| 11 |  |
| N | 5N + 4 |

|  |  |
| --- | --- |
| Number of pieces per roll | Total number of  pieces |
| 10 |  |
| 20 |  |
| 5 |  |
| P |  |
| X |  |

Making Sense of Algebraic Expressions

This is 40 pieces of candy. How many pieces are in each roll?

This is 58 pieces of candy. How many pieces are in each roll?



**-6**

This is 120 pieces of candy. How many pieces are in each roll?



**-20**

This is 28 pieces of candy. How many pieces are in each roll?



**-11**

**How many candies are in each roll below?**

3 rolls

18 pieces

4X

24

4X - 8

16

4X - 12

16

4x

20

4X + 4

20

20

4x + 8

40

4X + 8

4x + 8

16

4X + 4

16

16

4X

16

4X - 4

**How many candies are in each roll below?**

5 rolls

20 pieces

5X

25

25

5X + 5

5X + 10

25

25

5X + 15

5X + 20

25

25

5X + 25

5X + 25

50

25

5X - 5

5X - 10

25

**How many candies are in each roll below?**

25

5X - 15

5X - 20

25

2X

120

2X

240

2X - 20

120

240

2X - 20

2X - 40

120

240

2X - 40

2X + 10

120

240

2X + 10

2X + 20

120

240

2X + 20

P

4X + 20

120

240

4X +20

Solve each of the equations below. You may use a balance to help with your reasoning if you choose.

**1). a + 5 = 23 2). s – 7 = 15**

**3). d – 9 = 17 4). 12 = x + 4**

**5). 7 = y – 2 6).4y + 3 = 15**

**7). 8x – 4 = 20 8). 3x = 4 + 11**

**9). X – 3 = 1 + 4 10). X + 7 = 2 + 5**

**11). 2(5x + 3) = 13 12). 6(3x - 1) = 3**

**Inequality**

To solve for an inequality, student will follow the same steps as an equation:

Example:

Equation: 3X + 2 = 17 Inequality: 3X +2 < 17

1. Subtract two from both sides: 3X = 15 3X < 15
2. Divide both sides by 3: X = 5 X < 5

Graph: X=5

4 5 6

Graph: 5< X ○

4 5 6

< is less than < is less than or equal to

> is greater than > is greater than or equal to

Practice: Solve and graph

1. 7 + 4X > 17
2. 24 > 3B – 3
3. 2 + 8M < 50
4. 57 < 6W - 3