



Due: First Day of School

FIRST AND LAST NAME

Math

SUBJECT

DATE

BPMS

ADVISORY

# Bronx Prep Middle Rising 7<sup>th</sup> Grade

Dear Scholar,

You finished 6<sup>th</sup> grade! Your hard work doesn't stop here! As incoming 7<sup>th</sup> graders, we know you will practice over the summer to get smarter, faster, and challenge yourself to learn more.

As the 7<sup>th</sup> grade class, we want you to be prepared for the awesome work at Bronx Prep Middle School. The following packet will help you prepare for this awesome work. **It must be printed, completed in its entirety, and submitted in person on the first day of school on August 30<sup>th</sup>, 2021.**

We are so excited to see you again!!

Cher érudit,

Vous avez terminé la 6e ! Votre travail acharné ne s'arrête pas là ! En tant qu'élèves entrants de 7e année, nous savons que vous vous entraînerez au cours de l'été pour devenir plus intelligent, plus rapide et vous mettre au défi d'en apprendre davantage.

En tant que classe de 7e année, nous voulons que vous soyez préparé pour le travail formidable du Bronx Prep Middle School. Le paquet suivant vous aidera à vous préparer à ce travail impressionnant. **Il doit être imprimé, complété dans son intégralité et remis en personne le premier jour d'école le 30 août 2021.**

Nous avons tellement hâte de vous revoir !!

Estimado erudito,

¡Terminaste el sexto grado! ¡Tu arduo trabajo no se detiene aquí! Como estudiantes que ingresan al séptimo grado, sabemos que practicarán durante el verano para volverse más inteligentes, más rápidos y desafiarse a sí mismos para aprender más.

Como clase de séptimo grado, queremos que esté preparado para el increíble trabajo en Bronx Prep Middle School. El siguiente paquete le ayudará a prepararse para este maravilloso trabajo. **Debe imprimirse, completarse en su totalidad y enviarse en persona el primer día de clases el 30 de agosto de 2021.**

¡¡Estamos muy emocionados de verte de nuevo !!

## Exponents

$2^2 \rightarrow \underline{\hspace{2cm}}$

$10^2 \rightarrow \underline{\hspace{2cm}}$

$8^2 \rightarrow \underline{\hspace{2cm}}$

$4^2 \rightarrow \underline{\hspace{2cm}}$

$3^3 \rightarrow \underline{\hspace{2cm}}$

$6^2 \rightarrow \underline{\hspace{2cm}}$

$100^2 \rightarrow \underline{\hspace{2cm}}$

$5^2 \rightarrow \underline{\hspace{2cm}}$

$7^2 \rightarrow \underline{\hspace{2cm}}$

$12^2 \rightarrow \underline{\hspace{2cm}}$

$9^2 \rightarrow \underline{\hspace{2cm}}$

$1^2 \rightarrow \underline{\hspace{2cm}}$

$3^2 \rightarrow \underline{\hspace{2cm}}$

$11^2 \rightarrow \underline{\hspace{2cm}}$

$13 \rightarrow \underline{\hspace{2cm}}$

$9^0 \rightarrow \underline{\hspace{2cm}}$

$7^1 \rightarrow \underline{\hspace{2cm}}$

$8^0 \rightarrow \underline{\hspace{2cm}}$

$5^1 \rightarrow \underline{\hspace{2cm}}$

$3^0 \rightarrow \underline{\hspace{2cm}}$

$2^1 \rightarrow \underline{\hspace{2cm}}$

$10^0 \rightarrow \underline{\hspace{2cm}}$

$1.5^2 \rightarrow \underline{\hspace{2cm}}$

$2.0^2 \rightarrow \underline{\hspace{2cm}}$

$2^3 \rightarrow \underline{\hspace{2cm}}$

$3^0 \rightarrow \underline{\hspace{2cm}}$

$6^2 \rightarrow \underline{\hspace{2cm}}$

## Algebraic Expressions

- 1) Which expression below is equivalent to  $22 + 33$ ?
- A.  $3(11 + 2)$
  - B.  $11(2 + 3)$
  - C.  $2(11 \times 4)$
  - D.  $11(2 \times 3)$
- 2) Which expression below is equivalent to  $3(8 - 7)$ ?
- A.  $24 - 21$
  - B.  $24 + 12$
  - C.  $21 + 24$
  - D.  $21 - 24$
- 3) What is another way to represent  $8 \times 8 \times 8 \times 8$ ?
- A. 32
  - B.  $8^4$
  - C.  $8 \cdot 4$
  - D.  $4^8$
- 4) Which of the following answer choice is a possible solution to the inequality  $4y > 10$ ?
- A. 1
  - B. 7
  - C.  $\frac{1}{4}$
  - D. 2
- 5) Which of the following best describes the solution set  $x - 6 > 7$ ?
- A. There is only one solution.
  - B. There are two solutions.
  - C. There are no solutions.
  - D. There are infinite solutions.
- 6) Which of the following represents an amount that is at least \$45?
- A.  $x > \$45$
  - B.  $x < \$45$
  - C.  $x \leq \$45$
  - D.  $x \geq \$45$

**Ordering Decimals and Integers**

1. Order the following from least to greatest:

12.6, 12.7, 12.61, 12.06

Answer: \_\_\_\_\_

2. The price of milk goes from \$3.49 to \$3.21. What number represents the change in price?

- a) 0.28
- b) 1.28
- c) -0.28
- d) -1.28

Directions: Order the following from least to greatest.

3) 2.9, 2.89, 2.99, 2.09      Answer: \_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_

4) 0.75, 0.74, 0.7, 0.07      Answer: \_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_

5) 100.0, 100.01, 100.11, 100.1      Answer: \_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_ < \_\_\_\_\_

6) You are on the ski trip with BPM, it is your very first time trying out this new skiing thing. Nerd Dawg is there. The following picture shows the mountain:



Top  
Elevation: 2,200 feet above sea level

Bottom  
Elevation: 500 feet above sea level.

a) Nerd Dawg starts at an elevation of 2,150.67 feet and he falls down at an elevation of 1,440.34 feet. What number shows his change in elevation?

Answer: \_\_\_\_\_

b) Ms. Moody starts out on the ski lift at 500 ft. When she gets off of the ski lift, she is at 2,190 ft. What is her change in elevation?

Answer: \_\_\_\_\_

c) If someone said that you are at an elevation of 0 feet, where would you be?

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**Patterns**

1. The pattern below is made from toothpicks. Figure 1 uses four toothpicks, Figure 2 uses seven toothpicks, and Figure 3 uses ten toothpicks. Assume that the pattern continues.

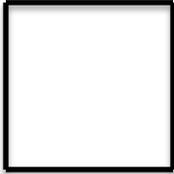


Figure 1



Figure 2

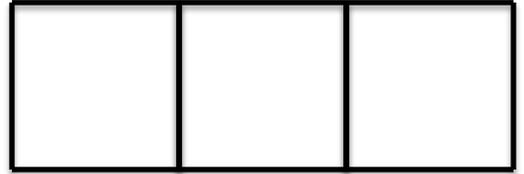


Figure 3

a) How many toothpicks will be in Figure 4? \_\_\_\_\_

b) Below, draw a picture of the fifth figure.

c) How many toothpicks did you use for Part B's figure? \_\_\_\_\_

d) Complete the table to show the number of toothpicks needed if the pattern continues.

Figure Number	1	2	3	4	5	6	7
Number of Toothpicks	4	7					

e) What do you notice about the number of toothpicks needed for each figure?

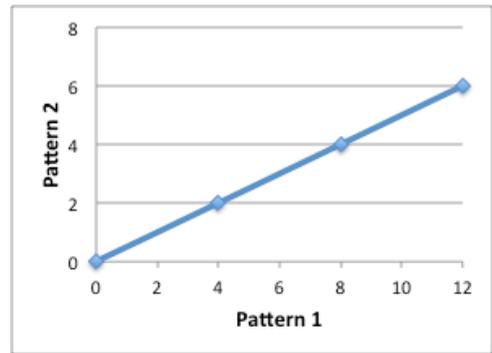
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2. According to the table, what is the ratio of pattern 2 to pattern 1?

- A.  $\frac{1}{4}$
- B.  $\frac{1}{2}$
- C.  $\frac{2}{1}$
- D. 1



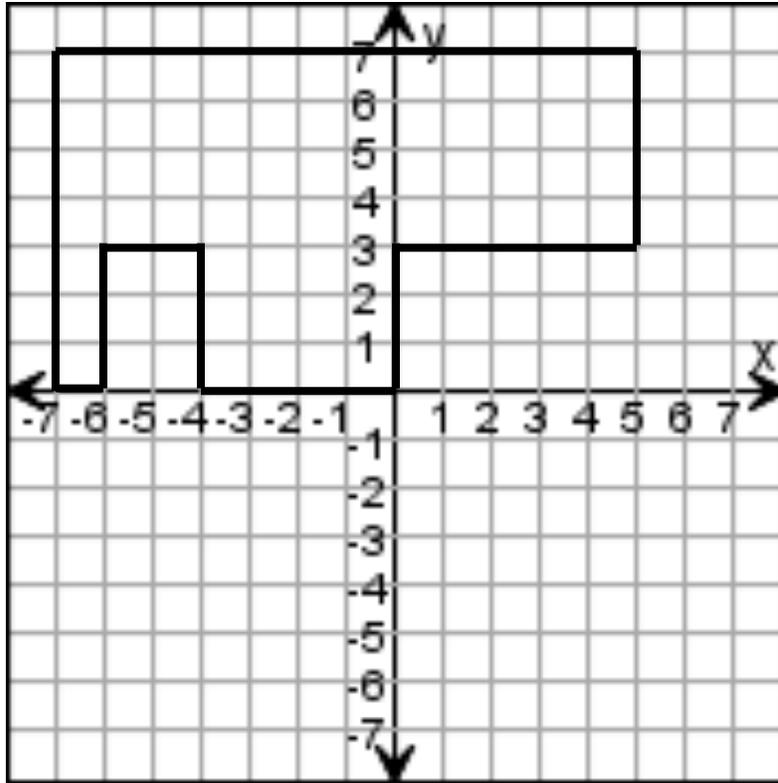
Adding and Subtracting Integers

<b><math>-4 + -3</math></b>	<b><math>6 + -9</math></b>	<b><math>-7 + -4</math></b>	<b><math>-2 - 11</math></b>	<b><math>-4 + 13</math></b>
<b><math>-13 +</math></b>	<b><math>-6 + 6</math></b>	<b><math>-11 + -4</math></b>	<b><math>-3 - (-8)</math></b>	<b><math>12 + -7</math></b>
<b><math>(-4)-(-4)</math></b>	<b><math>-7 + 1</math></b>	<b><math>8 - 14</math></b>	<b><math>-11 - (-3)</math></b>	<b><math>-6 - 5</math></b>
<b><math>12 - 8</math></b>	<b><math>-12 - 8</math></b>	<b><math>(-3)+(8)</math></b>	<b><math>-8 - 3</math></b>	<b><math>-8 + -3</math></b>

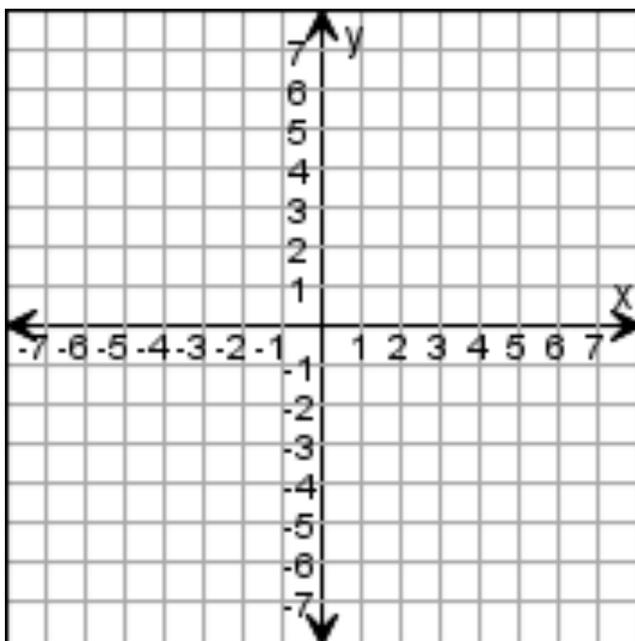
<b><math>-5 + -5</math></b>	<b><math>7 + -8</math></b>	<b><math>-2 + -4</math></b>	<b><math>-1 - 10</math></b>	<b><math>-3 + 10</math></b>
<b><math>-10 + -5</math></b>	<b><math>-8 + 5</math></b>	<b><math>-12 + -3</math></b>	<b><math>-4 - (-7)</math></b>	<b><math>-9 + -7</math></b>
<b><math>(-2)-(-2)</math></b>	<b><math>-2 + 1</math></b>	<b><math>11 - 13</math></b>	<b><math>-12 - (-1)</math></b>	<b><math>-5 - 7</math></b>
<b><math>10 - 9</math></b>	<b><math>-10 - 9</math></b>	<b><math>(-1)+(9)</math></b>	<b><math>-9 - 1</math></b>	<b><math>-9 + -1</math></b>

## Coordinate Plane

1. Find the area of the polygon. SHOW ALL WORK.



Area: \_\_\_\_\_



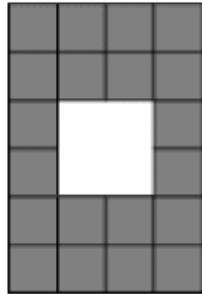
2. Create a rectangle ABCD that has an area of 24 units<sup>2</sup>.

a. Draw your rectangle and label the vertices.

b. Record the coordinate pairs.

**A** (     ,     )  
**B**  
**C**  
**D**

The Turners want to paint the floor of their porch. The shaded part of the figure below shows the part of the floor that needs paint.



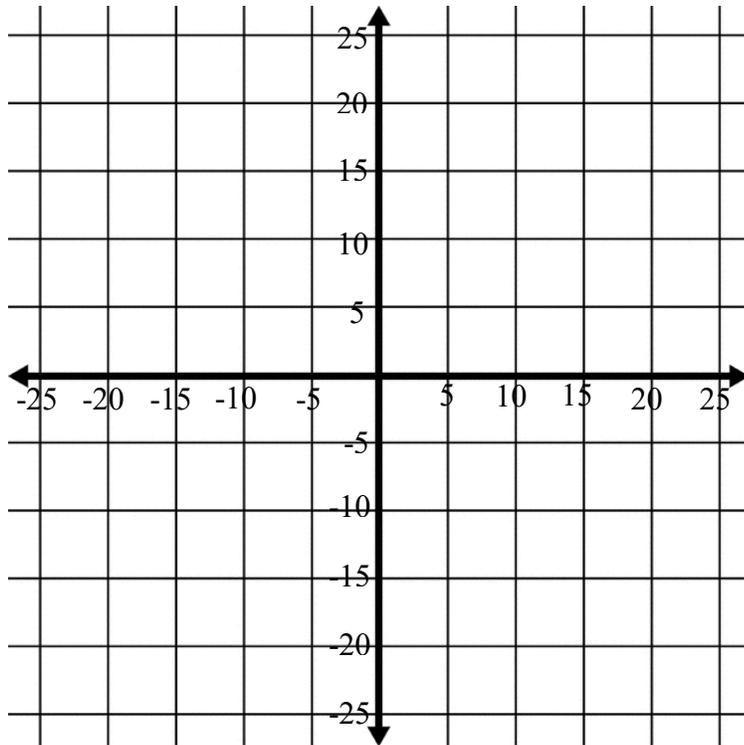
(  = 1 square foot)

If a can of paint covers 6 square feet of porch, how many cans of paint will they need? **SHOW ALL WORK**

**Answer:** \_\_\_\_\_

4. Plot and connect the following points on the coordinate grid below.

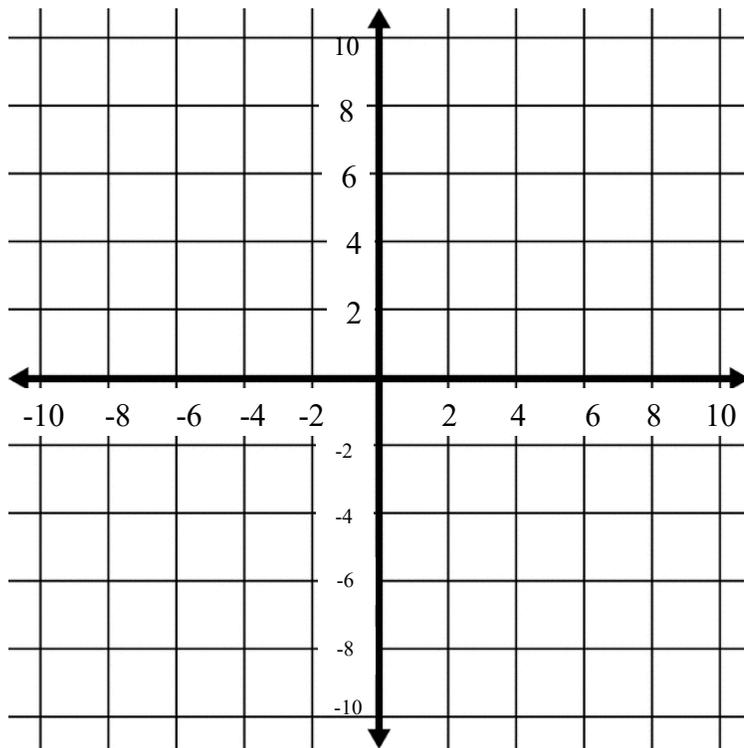
- D: (-10, 15)**
- P: (20, 15)**
- C: (20, -10)**
- S: (-10, -10)**



Determine the perimeter of the rectangle above.  
SHOW WORK:

Answer: \_\_\_\_\_

5. What is the area of the shape formed by connecting the points below?  
(6, 6), (6, -3), and (2, 6)



- A. 36 square units
- B. 18 square units
- C. 10 square units
- D. 5 square units

7. Ms. Blashek has a desk that is in the shape of a rectangular prism. It has a length of 6.5 ft, a height of 4 ft, and a width of 2.4 ft.

a) Find the surface area of the desk

Answer: \_\_\_\_\_

b) Mr. Neumeyer has a smaller desk that has dimensions that are half the length. Find the surface area of his desk.

Answer: \_\_\_\_\_

c) Use your knowledge of the distributive property to explain why your answer to Part C makes sense.

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## Ratios and Proportions

1. Kamille bought a new outfit that cost \$32.00. The tax rate is 9%. How much did she pay for the outfit **after** tax?

Answer: \_\_\_\_\_

2. Ms. Roth went to I-Hop for breakfast. She ordered pancakes for \$5.00, eggs for \$3.50, and orange juice for \$2.50. If she tips the waiter 16%, how much will she pay in total?

Answer: \_\_\_\_\_

3. Ms. Ellis went shopping at Forever 21. She bought jeans for \$21.50, a shirt for \$13.20, and shoes for \$36.00. If she pays a 12% sales tax, what is the total amount she will pay?

Answer: \_\_\_\_\_

4. John wants to spend 25% of his budget on food. If he spends \$12.00 on food, how much is his total budget?

Answer: \_\_\_\_\_

5. You choose to tip a taxi driver 20%. If the tip is \$2.00, how much was the original cost of the ride?

Answer: \_\_\_\_\_

6. James can swim 5 laps in 2 minutes.

a) Fill in the remaining blanks in the table below.

<b>Laps</b>		5	7.5		
<b>Minutes</b>	1			4	5

b) How many laps can he swim in 6 minutes? Show all work.

Answer: \_\_\_\_\_

7. A grocery store sign indicates that bananas are 3 for \$1.50, and a sign by the oranges indicates that they are 5 for \$3.00. Find the total cost of buying 2 bananas and 4 oranges.

Answer: \_\_\_\_\_

## Statistics

1. For this problem, refer to Table A and B.

**Table A**

Edgar's Midterm Grades			
93	92	90	90
	86	90	97

**Table B**

Edgar's Trimester Exam Grades			
88	89	93	95
	86	88	99

a) What is the median of Edgar's Midterm Grades?

Median: \_\_\_\_\_

2. The table below shows the grades of 6 different scholars.

Scholar	Percent
1	80
2	67
3	96
4	98
5	85
6	72

What is the average percent of the six scholars' scores?

Answer: \_\_\_\_\_

### **Algebraic Terminology**

*Write out the algebraic expression that represents the following statements*

1. The sum of  $x$  and 8

2. The sum of  $2x$  and 9

3. The sum of three times a number,  $x$ , and 12

4. The sum of  $5z$  and a number,  $n$ .

5. The sum of  $5z$  and a number  $n$ , decreased by 35.

6. The sum of a number  $x$ , and 4, and 7

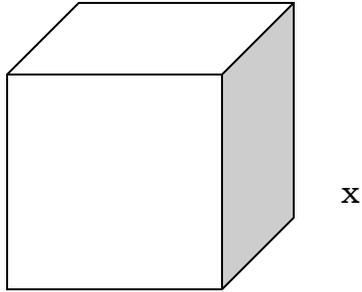
a. Use the commutative property to write an equivalent expression:

7. The sum of a number  $z$ , and 9 and 18

a. Use the commutative property to write an equivalent expression:

## Geometry

1.

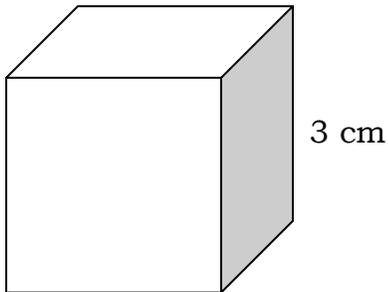


- a. What is the surface area of the cube? \_\_\_\_\_  
b. How do you know this?

\_\_\_\_\_  
\_\_\_\_\_

- c. If the measurement of this cube were in ft., what would be the units?  
\_\_\_\_\_

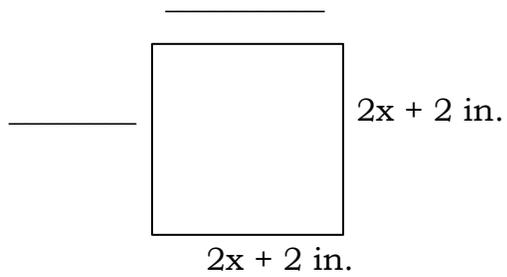
2.



- a. What is the surface area of the cube? \_\_\_\_\_

*Surface area of a cube is equal to  $6s^2$*

3. The square below has equal sides.



a) What is the perimeter of the square in terms of  $x$ ?

Answer: \_\_\_\_\_ (include units).

b) If  $x$  were equal to 2, what is the perimeter of the square?

Show Work:

Answer: \_\_\_\_\_ (include units)

c) If the length of each side of the square were doubled, what would be the **new length of each side**?

d) What would be the new **perimeter** be in terms of  $x$ .