Grade 8 Math Learning Packet #2

May 4, 2020 to May 15, 2020

You will apply perimeter, circumference, and area formulas to solve practical problems involving composite plane figures.

Describe how the volume and surface area of a rectangular prism is affected when one measured attribute is multiplied by a factor of 1/4, 1/3, 1/2, 2, 3, or 4.

Notes and Vocabulary Cards at the End of Packet Additional Optional Resources and Activities are available on Math Grade 8 Google Classroom code: bipk7lw

Neview #7		
a. Combine like terms	a. Simplify the expression	c. simplify the expression
8(-2 - 4w) +2w -3	$-a^2$ when $a = -4$	x = (-2) and y = (-2)
		$(x - 4)^2 - y$

The Better Value

The leaders of a company that manufacture Liono's Frosted Cereal found that they were spending more money on the box than the cereal inside. Mr. Mane, the CEO, needs your help. His company can make 2 different size boxes that will be cheaper than the current box being used. Throughout the next couple of days, we will examine the volume and surface area of both boxes below to determine which box will be the best choice for him to use.



Determine the *surface area* of each box.

Poviow #7

Box A	Box B
Which box will require the most cardboa	rd material to make? How do you know?





(you calculated this in a previous activity) (you calculated this in a previous activity)		
Now, double the length of Box A and calculate Now, double the length of Box B and calculate the new surface area.	late	
The new surface area of Box A is The new surface area of Box B is		
What happened to the surface area of the boxes when you doubled the length?		





Determine the *Volume* of each box.

Box A	Box B
Which box will hold the mos	t cereal? How do you know?



a. Simplify the expression	b. Combine like terms	c. simplify the expression
		when $k = -3$
When $f = -8$, $g = -5$, and $h = -3$	-2(x+9) + 4x	
		$-k^2 - 9$
$-g(1+f)+h^2$		$\overline{k+1}$

Examine the calculations you did on the surface area and volume of the boxes from the previous days. Which box would be the best for Mr. Mane to choose for Liono's Frosted Cereal?

- Do you want to choose a box that requires more cardboard or less cardboard? Why?
- Do you want to choose a box that hold more cereal or less cereal? Why?

Review #11



Which box is the best for Mr. Mane's company? Be sure to explain your answer and give evidence from your previous calculations.

Review #12	-	
a. Simplify like terms	b. Simplify like terms	c. simplify the expression
when $f = -8$, $g = -5$, and $h = -3$	-2(x+3) + 2x - 7	when $e=1$, $f=3$ and $h=-1$
$-g(1+f)+h^2$		$(fe)^2 + h$



Area = 15 yards squared

Mrs. Tindle's back yard is pictured below.

2x - 1



How much space will Mrs. Tindle's dogs have to run in her new fenced in yard?

a. simplify the expression	b. Combine like terms	c. simplify the expression
$-9 - a^2$ when $a = -3$	13 + -4(4 - 3x)	$d(5 + d)^2$ when $d = -2$

Mrs. Tindle's neighbor has a rectangular yard that has a length of 8 meters and a diagonal of 10 meters.



How much fencing will Mrs. Tindle's neighbor need to fence in her yard?

How much space will the dogs have to run in the new fenced in yard?

Review #14		
a. Simplify the expression	b. Combine like terms	c. simplify the expression
when $b = -5$		when $e=(-3)$ and $f=(-1)$
	5y - 2(2 - 3y)	$2e^2 - f^4$
$-b^4 + b^4$		
i		



If the perimeter is 46 feet, what is the area?

Review #15a. simplify the expression
when c = -2 and d = 4b. Combine like terms
-3y + 2(2y - 5) - y - 6c. simplify the expression
when a = -4
 $-a^2 - a + 6$ $d^2 + c^3 - 1$ $-a^2 - a + 6$

Mrs. T has cookie dough rolled out. The picture on the left shows the larger rectangle as representing the cookie dough and the circles representing the cookies. How many cookies can Mrs. T make from the cookie dough? (hint: the answer is more than 16 cookies)

Show your work and thought process below.





Review #17	-	
a. Combine like terms	b. Combine like terms	c. simplify the expression
-3(2x+9)+4x	9(-1-x) + 20x	x = (-2) and y = (-4) (x - 3) ² - y



William wants to install new carpet in his roof top bedroom. How much carpet will he need to buy to cover the entire room (not including the bathroom)?

Total area: _____

If the carpet William wants to buy cost \$1.05 per square foot, how much will it cost him to carpet the room? Price of Carpet: _____ Review #18

a. Combine like terms	b. Combine like terms	c. simplify the expression
-y + 2(2y + 8) + -y - 6	2{ -2x - 3x - (-4)}	When a = 1, b = (-1), and c = -2
		-4a – 3b + c

The principal at the local high school wanted to create 5 metal signs to direct students toward the auditorium. The Shop teacher came up with the design below and said he could make the signs if she bought the metal. What is the minimum amount of metal the principal should buy to make all 5 signs?





Total metal: _____

The principal has \$300.00 to spend on the signs. If the metal cost \$0.20 per square inch, Will she have enough to buy the metal for all 5 signs? If she does, how much will she have left over? If she doesn't how much more does she need?



