



BeloveED Community Charter School
Middle School Academy

Entering 7th Grade
Math Summer 2023 Packet



Name: _____

Middle School Mathematics Department
508 Grand St.
Jersey City, NJ 07302



June 2023

Dear rising 7th graders and families,

This packet contains math practice problems for you to complete over the summer. The BelovED Community Charter School Middle School Math Department prepared the packets and selected topics that are prerequisites for the math course you will take during the 2023-2024 school year.

Each section of the packet contains the title of the associated Khan academy unit. You can find examples and additional practice problems by searching the unit title in the Khan Academy search engine at www.khanacademy.org.

This packet must be completed and brought to math class on the first day of school in September. Completion of the packet on time with all work shown will result in a 100% test grade during the first week of school. This will contribute to your Quarter 1 average.

Complete this packet **WITHOUT A CALCULATOR** and be sure to **SHOW ALL WORK** for every problem. We are looking forward to an excellent 2023-2024 school year!

Thank you,

Ms. Camille Sanchez
Middle School Math Department Chair

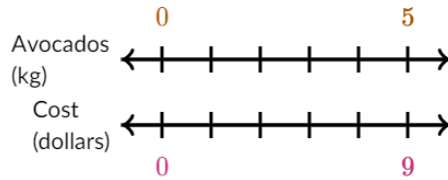


NO CALCULATOR- SHOW ALL WORK IN BOX

Khan academy unit: Ratio, Rates & Percentages

1.

The double number line shows that 5 kilograms of avocados cost \$9.



Based on the ratio shown in the double number line, what is the cost for 1 kilogram of avocados?

\$

2.

A community center is holding a raffle. The table below shows the number of tickets purchased and total price paid for three different people.

Person	Tickets purchased	Total price (in dollars)
A	3	191
B	5	309
C	8	435

Who paid the lowest *price per ticket*?

Choose 1 answer:

A

B

C



3.

Joseph is making kebabs. He wants each kebab to have 3 pieces of meat and 4 pieces of vegetables.

Which of the following could Joseph use to make kebabs without any leftovers?

Choose 3 answers:

A 18 pieces of meat and 30 pieces of vegetables

B 20 pieces of meat and 32 pieces of vegetables

C 30 pieces of meat and 40 pieces of vegetables

D 45 pieces of meat and 60 pieces of vegetables

E 72 pieces of meat and 96 pieces of vegetables

4.

Complete the ratio table to convert the units of measure from ounces to grams or grams to ounces.


Ounces	Grams
1	28
3	<input type="text"/>
<input type="text"/>	140

5.

$\frac{13}{10}$ of a number is what percentage of that number?

%



6.	<p>Express the percent as a decimal.</p> <p>154%</p> <p><input type="text"/></p>
7.	<p>The large rectangle below represents one whole.</p>  <p>What percent is represented by the shaded area?</p> <p><input type="text"/> %</p>
8.	<p>Samuel has a collection of toy cars. His favorites are the 27 red ones, which make up 60% of his collection.</p> <p>How many toy cars does Samuel have?</p> <p><input type="text"/> toy cars</p>



Khan academy unit: Arithmetic Expressions

9.	<p>Evaluate the following expression.</p> $6 + 8 \div 2$ <p><input type="text"/></p>
10.	$\left(\frac{1}{3}\right)^3 = \text{$
11.	$(2 \cdot 3)^2 - 5^2 = \text{$



12.	<p>Complete the inequality with $>$, $<$, or $=$.</p> $7^2 \quad \boxed{\vee} \quad 3^4$
13.	$\left(\frac{1}{5}\right)^2 (3 + 2 + 5)^2 = \boxed{}$

Khan academy unit: Properties of Numbers

14.	<p>Apply the distributive property to factor out the greatest common factor.</p> $44 + 48 = \boxed{}$
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15.

Shaquira is baking cookies to put in packages for a fundraiser. Shaquira has made 86 chocolate chip cookies and 42 sugar cookies.

Shaquira wants to create identical packages of cookies to sell, and she must use all of the cookies.

What is the greatest number of identical packages that Shaquira can make?

packages

16.

Zayed is helping his classmates get ready for their math test by making them identical packages of pencils and calculators.

He has 72 pencils and 24 calculators and he must use all of the pencils and calculators.

If Zayed creates the greatest number of identical packages possible, how many pencils will be in each package?

pencils



<p>17.</p>	<p>Where is the blue dot on the number line?</p> <p><input type="text"/></p>
<p>18.</p>	<p>LeBron keeps track of events in his life relative to the year he was born. Relative to when he was born, his brother was born in year -3, and his family moved in year 7.</p> <p>Which one of the following inequalities correctly compares the relative years?</p> <p>Choose 1 answer:</p> <p><input type="radio"/> A $-3 > 7$</p> <p><input type="radio"/> B $7 > -3$</p>
<p>19.</p>	<p>Which point represents $-(-2)$ on the number line?</p>



20.	<p>The freezing point of water is 0°C. Scientists use positive numbers to show temperatures above the freezing point of water and negative numbers to show temperatures below the freezing point of water.</p> <p>The temperature of Mia's iced coffee is -4°C.</p> <p>What does -4°C represent in this situation?</p> <p>Choose 1 answer:</p> <p>_____</p> <p><input type="radio"/> (A) Mia's iced coffee is 4°C below the freezing point of water.</p> <p>_____</p> <p><input type="radio"/> (B) Mia's iced coffee is 4°C above the freezing point of water.</p> <p>_____</p> <p><input type="radio"/> (C) Mia's iced coffee is at the freezing point of water.</p> <p>_____</p>
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Khan academy unit: Variables and Expressions

21.	<p>Which expressions are equivalent to $q + p + q + p + q$?</p> <p>Choose all answers that apply:</p> <p>_____</p> <p><input type="checkbox"/> (A) $2p + 3q$</p> <p>_____</p> <p><input type="checkbox"/> (B) $2(p + q) + q$</p> <p>_____</p> <p><input type="checkbox"/> (C) None of the above</p> <p>_____</p>
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22.	<p>Evaluate $\frac{3}{2}y - 3 + \frac{5}{3}z$ when $y = 6$ and $z = 3$.</p> <p><input type="text"/></p>
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23.	<p>What is the value of $x^3 \cdot y^1$ when $x = 5$ and $y = 10$?</p> <p><input type="text"/></p>
24.	<p>Combine the like terms to create an equivalent expression.</p> <p>$4q + 3 + 2q - 1$</p> <p><input type="text"/></p>
25.	<p>Distribute to create an equivalent expression with the fewest symbols possible.</p> <p>$(6m - 7) \cdot 4 =$ <input type="text"/></p>



26.	<p>Write an expression to represent:</p> <p>Eight less than the product of two and a number x.</p> <p><input type="text"/></p>
27.	<p>Lois and Clark own a company that sells wagons. The amount they pay each of their sales employees (in dollars) is given by the expression $12h + 30w$ where h is the number of hours worked and w is the number of wagons sold.</p> <p>What is the amount paid to an employee that works 6 hours and sells 3 wagons?</p> <p>\$ <input type="text"/></p>

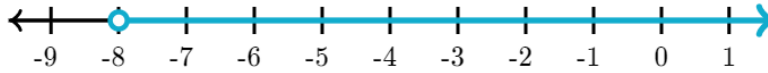
Khan academy unit: Equations and Inequalities Introduction

28.	<p>Identify whether each phrase is an expression, equation, or inequality.</p> <table border="1"><thead><tr><th data-bbox="318 1402 483 1444">Term</th><th data-bbox="483 1402 751 1444">Phrase</th></tr></thead><tbody><tr><td data-bbox="318 1444 483 1528">Inequality</td><td data-bbox="483 1444 751 1528">$w^4 = 81$</td></tr><tr><td data-bbox="318 1528 483 1612">Expression</td><td data-bbox="483 1528 751 1612">$bc + 1 - (8d - 4)$</td></tr><tr><td data-bbox="318 1612 483 1696">Equation</td><td data-bbox="483 1612 751 1696">$63 < 9k$</td></tr></tbody></table>	Term	Phrase	Inequality	$w^4 = 81$	Expression	$bc + 1 - (8d - 4)$	Equation	$63 < 9k$
Term	Phrase								
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29.

Choose the inequality that represents the following graph.



Choose 1 answer:

(A) $-8 > x$

(B) $-8 < x$

(C) $1 > x$

(D) $8 > x$

30.

After Luca took his dogs for a walk, he gave them 6 dog treats. When Luca's dad got home from work, he gave the dogs t more treats. All together that day, Luca's dogs got 10 dog treats.

Write an equation to describe this situation.

How many dog treats did Luca's dad give the dogs?

31.

Write an equation to represent the following statement.

29 is 6 more than k .

Solve for k .

$k =$



32.	<p>If nitrogen is warmer than -320° Fahrenheit, it will be a gas.</p> <p>Write an inequality that is true only for temperatures (t) at which nitrogen is a gas.</p> <p><input type="text"/></p>
33.	<p>Which value of g makes $26 = 7(g - 9) + 12$ a true statement?</p> <p>Choose 1 answer:</p> <p>_____</p> <p><input type="radio"/> (A) $g = 11$</p> <p>_____</p> <p><input type="radio"/> (B) $g = 12$</p> <p>_____</p> <p><input type="radio"/> (C) $g = 13$</p> <p>_____</p> <p><input type="radio"/> (D) $g = 14$</p>
34.	<p>Solve the equation.</p> $\frac{11}{15} = w - \frac{8}{15}$ <p>$w =$ <input type="text"/></p>

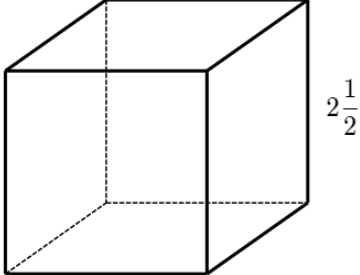


<p>35.</p>	<p>Your favorite anime series has episodes that are 20 minutes long. In the equation below, w is the number of episodes you watch and t is the number of minutes you spend watching anime.</p> <p>The relationship between these two variables can be expressed by the following equation:</p> $t = 20w$ <p>Identify the dependent and independent variables.</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th>Dependent variable</th> <th>Independent variable</th> </tr> </thead> <tbody> <tr> <td>The number of episodes you watch</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>The number of minutes you spend watching anime</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table>		Dependent variable	Independent variable	The number of episodes you watch	<input type="radio"/>	<input type="radio"/>	The number of minutes you spend watching anime	<input type="radio"/>	<input type="radio"/>
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<p>36.</p>	<p>Mitch tried to solve an equation step by step.</p> $7.7 = w - 2$ $7.7 - 2 = w - 2 + 2 \quad \text{Step 1}$ $5.7 = w \quad \text{Step 2}$ <p>Find Mitch's mistake.</p> <p>Choose 1 answer:</p> <p><input type="radio"/> (A) Step 1</p> <p><input type="radio"/> (B) Step 2</p> <p><input type="radio"/> (C) Mitch did not make a mistake.</p>									



37.	<p>Sharon read a 300-page book. She read at a rate of 15 pages per day in d days.</p> <p>Write an equation to describe this situation.</p> <p><input type="text"/></p>
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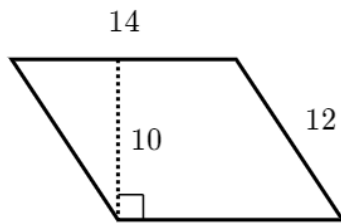
Khan academy unit: Geometry

38.	<p>A rectangular prism with a volume of 4 cubic units is filled with cubes with side lengths of $\frac{1}{3}$ unit.</p> <p>How many $\frac{1}{3}$ unit cubes does it take to fill the prism?</p> <p><input type="text"/></p>
39.	<p>Find the surface area of the cube shown below.</p> <p><input type="text"/> units²</p> <div style="text-align: center;"></div>



40.

Look at the image below.



Find the area of the parallelogram.

square units

41.

Olivia is cutting a $1\frac{1}{2}$ m by $\frac{3}{4}$ m piece of rectangular paper into two pieces along its diagonal.

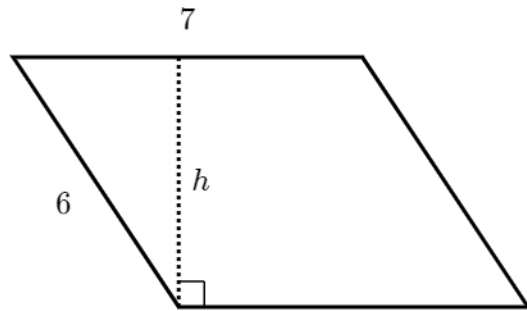
Find the area of each of the pieces.

m²



42.

The parallelogram shown below has an area of 35 units^2 .



Find the missing height.

$h =$ units