

Student Name : _____ Class Name : **6th Grade Section I ALEKS**
 Number of Questions: **60** Instructor Name : **Hoyos, Michelle**

Question 1 of 60Solve for w .

$$-28 = -14w$$

Simplify your answer as much as possible.

Question 2 of 60

Translate this sentence into an equation.

The difference of Mabel's height and 9 is 59.

Use the variable m to represent Mabel's height.**Question 3 of 60**Solve for v .

$$-\frac{1}{5} + v = \frac{3}{4}$$

Simplify your answer as much as possible.

Question 4 of 60

Translate this sentence into an equation.

The product of Rita's savings and 9 is 99.

Use the variable r to represent Rita's savings.**Question 5 of 60**

Each equation below is followed by several stories.

Select *all* of the stories that can be represented by the equation.
 If *none* of the stories can be represented, select "None of the above".

(a) $x + 3 = 30$

- | |
|---|
| <input type="checkbox"/> Goran uses 3 eggs to make a cake. He wants to make x cakes. He needs 30 eggs. |
| <input type="checkbox"/> A tray has x eggs. Another tray has 3 eggs. Together, the two trays have 30 eggs. |
| <input type="checkbox"/> Goran had x eggs. Then his friend gave him 3 eggs. Goran now has 30 eggs. |
| <input type="checkbox"/> Goran had x eggs in his refrigerator. Then he used 3 of them for his cake recipe. He now has 30 eggs left in the refrigerator. |
| <input type="checkbox"/> None of the above |

(b) $6x = 54$

- | |
|---|
| <input type="checkbox"/> A box had x pencils. Then 6 more pencils were placed in the box. The box now has 54 pencils. |
| <input type="checkbox"/> A box had x pencils. Then 6 pencils were removed from the box. The box now has 54 pencils. |
| <input type="checkbox"/> A box has 6 pencils. Each pencil weighs x grams. The 6 pencils weigh a combined total of 54 grams. |
| <input type="checkbox"/> A box has 54 pencils. The pencils are aligned in 6 rows, with x pencils in each row. |
| <input type="checkbox"/> None of the above |

Question 6 of 60Solve for x .

$$\frac{x}{3} = 45$$

Simplify your answer as much as possible.

Question 7 of 60Solve for y .

$$\frac{y}{4} = 76$$

Simplify your answer as much as possible.

Question 8 of 60

Each equation below is followed by several stories.

Select *all* of the stories that can be represented by the equation. If *none* of the stories can be represented, select "None of the above".

(a) $x - 7 = 35$

<input type="checkbox"/> A dog park has 7 sections. Each section has x dogs. The park has a total of 35 dogs.
<input type="checkbox"/> There were x dogs at a park. Then 7 dogs were taken away. There are now 35 dogs in the park.
<input type="checkbox"/> There were x dogs at a park. Then 7 of the dogs ran outside of the park. There are now 35 dogs left in the park.
<input type="checkbox"/> There were x dogs at a park. Then 7 other dogs were brought in. There are now 35 dogs at the park.
<input type="checkbox"/> None of the above

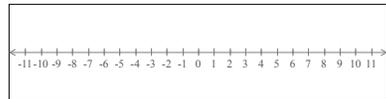
(b) $10x = 70$

<input type="checkbox"/> Raina's math test has two parts. One part is worth x points. The other part is worth 10 points. The test is worth 70 points.
<input type="checkbox"/> Raina's math test covers x chapters. Each chapter has 70 questions on the test. The test has 10 questions.
<input type="checkbox"/> Raina's math test has x problems. She solved 10 of them. There are 70 problems left for Raina to solve.
<input type="checkbox"/> Raina's math test has 10 problems. Each problem is worth x points. Her math test is worth 70 points.
<input type="checkbox"/> None of the above

Question 9 of 60

Graph the inequality below on the number line.

$x < 0$



Question 10 of 60

Translate this sentence into an equation.

11 more than Holly's height is 68.

Use the variable h to represent Holly's height.

Question 11 of 60

Tammy buys candy that costs \$6 per pound. She will spend more than \$66 on candy. What are the possible numbers of pounds she will buy?

Use p for the number of pounds Tammy will buy. Write your answer as an inequality solved for p .

Question 12 of 60

Jessica will run less than 25 miles this week. So far, she has run 12 miles. What are the possible numbers of additional miles she will run?

Use t for the number of additional miles she will run. Write your answer as an inequality solved for t .

Question 13 of 60

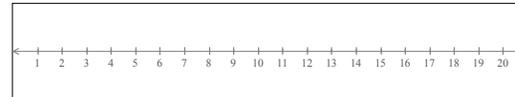
Yolanda will bike more than 28 kilometers. When she bikes, she bikes loops around her neighborhood. One loop around her neighborhood is 4 kilometers. Let's look at the possible numbers of loops Yolanda will bike.

(a) Fill in the blanks to write an inequality that can be used to find x , the number of loops Yolanda will bike. Choose only from $4 + x$, $4 - x$, $x - 4$, $4x$, $\frac{4}{x}$, $\frac{x}{4}$, $<$, \leq , $>$, \geq , or 28.

$4 + x$	$4 - x$	$x - 4$	$4x$	$\frac{4}{x}$	$\frac{x}{4}$	$<$	\leq	$>$	\geq	28
Inequality: _____										

(b) Find the possible numbers of loops Yolanda will bike. Write your answer as an inequality solved for x .

(c) On the number line below, graph the solution that represents the possible numbers of loops Yolanda will bike.



Question 14 of 60

Solve the inequality for y .

$2y \leq -20$

Simplify your answer as much as possible.

Question 15 of 60

Solve for y .

$$22 = 5y + 2$$

Simplify your answer as much as possible.

Question 16 of 60

Latoya is buying nuts. She will spend at most 12 dollars on nuts. So far, she has spent 3 dollars on nuts. Let's look at the possible numbers of additional dollars Latoya will spend on nuts.

(a) Fill in the blanks to write an inequality that can be used to find x , the number of additional dollars Latoya will spend on nuts. Choose only from $3 + x$,

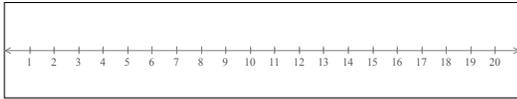
$$3 - x, x - 3, 3x, \frac{3}{x}, \frac{x}{3}, <, \leq, >, \geq, \text{ or } 12.$$

$3 + x$	$3 - x$	$x - 3$	$3x$	$\frac{3}{x}$	$\frac{x}{3}$	$<$	\leq	$>$	\geq	12
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Inequality: _____

(b) Find the possible numbers of additional dollars Latoya will spend on nuts. Write your answer as an inequality solved for x .

(c) On the number line below, graph the solution that represents the possible numbers of additional dollars Latoya will spend on nuts.



Question 17 of 60

Solve for v .

$$18 = \frac{v}{4} + 17$$

Simplify your answer as much as possible.

Question 18 of 60

Solve the inequality for y .

$$y + 10 \geq 18$$

Simplify your answer as much as possible.

Question 19 of 60

Solve the inequality for v .

$$v + 14 \leq 13$$

Simplify your answer as much as possible.

Question 20 of 60

Solve for y .

$$218 = -y + 171$$

Question 21 of 60

- (a) At Hoffman's Bike Rentals, it costs \$19 to rent a bike for 4 hours. How many dollars does it cost per hour of bike use?
- (b) A color printer prints 12 pages in 6 minutes. How many minutes does it take per page?

If necessary, round your answers to the nearest hundredth.

Question 22 of 60

- (a) Henry used 92.4 grams of sugar to bake 6 cookies. He used the same amount of sugar in each cookie. For the next batch, Henry plans to bake 8 cookies, with the same amount of sugar in each cookie as last time.

Draw a tape diagram showing the 8 cookies in the space provided.

- (b) How much sugar would be used in 8 cookies?

_____ grams

Question 23 of 60

Goran paid \$12.24 for a 6.35-kg bag of dog food. A few weeks later, he paid \$13.99 for a 7.48-kg bag at a different store.

Find the unit price for each bag. Then state which bag is the better buy based on the unit price.

Round your answers to the nearest cent.

Unit price for the 6.35-kg bag:
\$ _____ per kg

Unit price for the 7.48-kg bag:
\$ _____ per kg

The better buy:

The 6.35-kg bag

The 7.48-kg bag

Neither (They have the same unit price)

Question 24 of 60

A food truck is tracking sales for the day. These items were sold so far.



Item	Quantity
Burritos	3
Churros	4
Tacos	5

(a) Build a tape diagram (bar diagram) that shows the ratio of burritos to churros.

(b) Write the ratio of burritos to churros.

_____ : _____

Question 25 of 60

Here are some facts about units of volume.

Unit	Symbol	Fact
fluid ounce	fl oz	
cup	c	1 c = 8 fl oz
pint	pt	1 pt = 2 c
quart	qt	1 qt = 2 pt
gallon	gal	1 gal = 4 qt

Fill in the blanks.

8 pt = qt
 7 c = fl oz

Question 26 of 60

There are 56 students in a middle school band. Three out of every eight are in the 7th grade.

(a) Build a tape diagram (bar diagram) that shows, for all students in the band, the number who are in 7th grade and the number who are not.

(b) Using the diagram, find the number of students in the band who are in 7th grade.

_____ students

Question 27 of 60

Pablo cut 2 yards from a coil of rope. How much did he cut in inches?

Use the table below. Include the correct unit in your answer.

Length		
Unit	Symbol	Fact
inch	in	
foot	ft	1 ft = 12 in
yard	yd	1 yd = 3 ft

Question 28 of 60

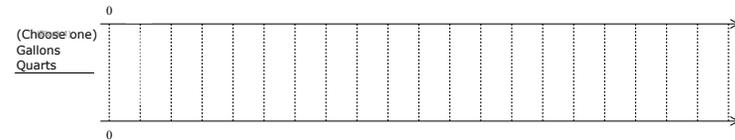
There are 6 roses in a vase of 14 flowers. The rest are daisies.

- (a) What is the ratio of all flowers in the vase to daisies?
 (b) What is the ratio of roses to daisies?

Question 29 of 60

Michael used 3.5 gallons of gasoline on a road trip. He wants to know how much gasoline was used in quarts.

(a) Create a double number line that shows 3.5 gallons in quarts. Use the fact that 1 gallon = 4 quarts.



(Choose one)
 Gallons _____
 Quarts _____

[Blank 1 Options](#) [Blank 2 Options](#)

(b) How much gasoline was used in quarts?

_____ quarts

Question 30 of 60

The ratio of white marbles to black marbles in a jar is 2 : 9.

Check all statements that must be true based on the statement above.

If none of the statements is true, check "None of the above".

- | |
|--|
| <input type="checkbox"/> For every 9 white marbles in the jar, there are 2 black marbles. |
| <input type="checkbox"/> There are exactly 2 white marbles and exactly 9 black marbles in the jar. |
| <input type="checkbox"/> For every 2 white marbles in the jar, there are 9 black marbles. |
| <input type="checkbox"/> For every 2 black marbles in the jar, there are 9 white marbles. |
| <input type="checkbox"/> None of the above |

Question 31 of 60

Aldo is running for president of the chess club, and he received 26 votes. There are 50 members in the club. What percentage of the club members voted for Aldo?

Question 32 of 60

An item on sale costs 45% of the original price. The original price was \$31.

Use a calculator to find the sale price.

Question 33 of 60

Write $\frac{6}{48}$ as a decimal.

Question 34 of 60

Write $\frac{3}{5}$ as a percentage.

Question 35 of 60

Write $15\frac{7}{8}\%$ as a decimal (not as a percentage).

Question 36 of 60

Write $\frac{17}{6}$ as a decimal. If necessary, use a bar to indicate which digit or group of digits repeats.

Question 37 of 60

Write $\frac{6}{100}$ as a percentage.

Question 38 of 60

Evaluate the following.

$$2.75 \times \frac{7}{25}$$

Write your answer as a decimal.

Question 39 of 60

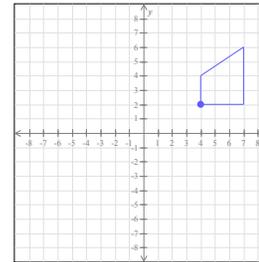
Write $\frac{3}{5}$ as a decimal.

Question 40 of 60

Write 0.1 as a fraction.
Do not try to simplify your answer.

Question 41 of 60

The figure below has a point marked with a large dot.
First, reflect the figure across the x-axis.
Then, give the coordinates of the marked point in the original figure and the final figure.



Point in original figure:

Point in final figure:

Question 42 of 60

Give the coordinates of the point obtained from each reflection.

- (a) Reflect the point $(-6, 3)$ across the x-axis: (\quad , \quad)
 (b) Reflect the point $(-6, 3)$ across the y-axis: (\quad , \quad)

Question 43 of 60

Find the distance between the points $(3, -4)$ and $(6, -4)$.

Distance: _____

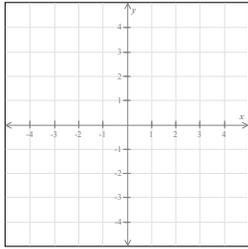
Question 44 of 60

Reflect $(-9, 4)$ across the y-axis.
Then reflect the result across the x-axis.

What are the coordinates of the final point?

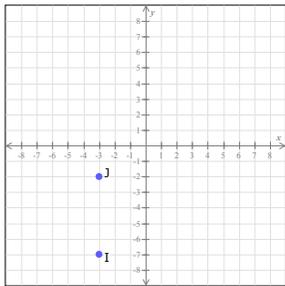
Question 45 of 60

Using the pencil, plot the point $\left(-3, -2\frac{1}{2}\right)$.



Question 46 of 60

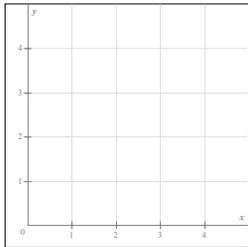
Find the distance between point I and point J .



Distance: ____

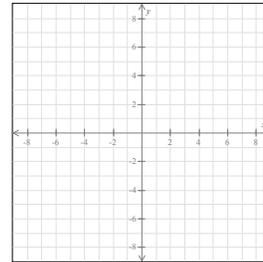
Question 47 of 60

Using the pencil, plot the point $\left(3\frac{1}{4}, 2\frac{3}{4}\right)$.



Question 48 of 60

Two termites land on the coordinate plane below. The first termite is located at $(-8, -6)$ and the second termite is located at $(-3, -6)$.



(a) Plot points to show the locations of the termites.

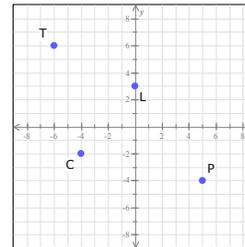
- (b) Write an expression that gives the distance between $(-8, -6)$ and $(-3, -6)$. First choose the correct form, then fill in the blanks choosing only from the numbers -3 , -6 , and -8 .
- $\boxed{} + \boxed{}$
- $\boxed{} - \boxed{}$

(c) On the graph, 1 unit represents 1 centimeter. Use the answer from part (b) to find the distance between the two termites.

_____ centimeters

Question 49 of 60

Name the quadrant or axis where each point lies.



Point C: - Quadrant I - Quadrant II - Quadrant III - Quadrant IV - x -axis - y -axis	Point L: - Quadrant I - Quadrant II - Quadrant III - Quadrant IV - x -axis - y -axis
Point P: - Quadrant I - Quadrant II - Quadrant III - Quadrant IV - x -axis - y -axis	Point T: - Quadrant I - Quadrant II - Quadrant III - Quadrant IV - x -axis - y -axis

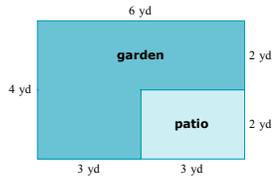
Question 50 of 60

Name the quadrant or axis where each point lies.

Point A	Point B
The x -coordinate is negative and the y -coordinate is negative.	The x -coordinate is negative and the y -coordinate is positive.
Location: - Quadrant I- Quadrant II- Quadrant III- Quadrant IV- x -axis - y -axis	Location: - Quadrant I- Quadrant II- Quadrant III- Quadrant IV- x -axis - y -axis

Question 51 of 60

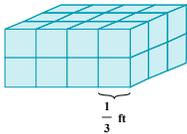
Manuel's backyard has a patio and a garden. Find the area of the garden. (Sides meet at right angles.)



Question 52 of 60

The large solid below is made from small cubes. Each has a side length of $\frac{1}{3}$ ft.

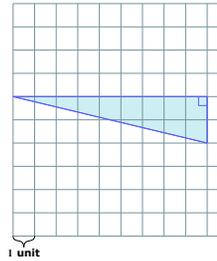
Answer the questions below. Write your answers in simplest form.



- (a) How many small cubes is the large solid made of? _____
- (b) What is the volume of one of the small cubes? _____ ft^3
- (c) What is the volume of the large solid? _____ ft^3

Question 53 of 60

Find the area of the right triangle.



Area: _____ square units

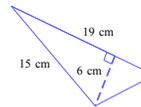
Question 54 of 60

Dan is staining the wooden floor of a court. The court is in the shape of a rectangle. Its length is 54 feet and its width is 30 feet. Suppose each can of wood stain covers 135 square feet. How many cans will he need to cover the court?

_____ cans

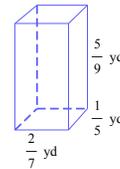
Question 55 of 60

Find the area of the triangle below. Be sure to include the correct unit in your answer.



Question 56 of 60

Find the volume of the rectangular prism. Write your answer in simplest form.



Question 57 of 60

Here are three solids.

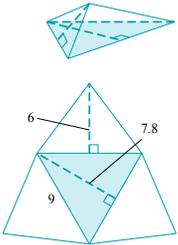


For each net below, select the solid above to which it folds.

1		<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> None
2		<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> None
3		<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> None
4		<input type="radio"/> a <input type="radio"/> b <input type="radio"/> c <input type="radio"/> None

Question 58 of 60

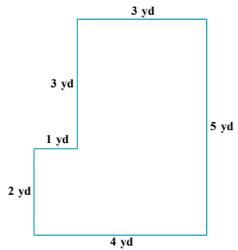
Here is a triangular pyramid and its net. The lateral faces are congruent triangles. The base (shaded) is an equilateral triangle. (All lengths are in millimeters.)



- Find the area of the base of the pyramid.
_____mm²
- Find the area of one lateral face of the pyramid.
_____mm²
- Use the net to find the *lateral* surface area of the pyramid. The base is not included.
_____mm²
- Use the net to find the *total* surface area of the pyramid.
_____mm²

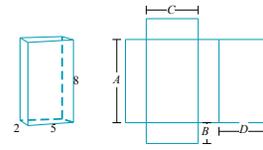
Question 59 of 60

Find the area of the figure. (Sides meet at right angles.)



Question 60 of 60

A rectangular prism and its net are shown below. (All lengths are in yards.)



(a) Find the following side lengths for the net.

$A = \underline{\hspace{1cm}} \text{ yd}$
 $B = \underline{\hspace{1cm}} \text{ yd}$
 $C = \underline{\hspace{1cm}} \text{ yd}$
 $D = \underline{\hspace{1cm}} \text{ yd}$

(b) Use the net to find the surface area of the prism.

_____yd²