

SUMMER MATH PRACTICE 1 OF 2 FOR STUDENTS  
ENTERING PRE-ALGEBRA



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Student Name : \_\_\_\_\_

Number of Questions: **54**

Instructor Note : **Work must be shown to receive credit. Use separate paper if necessary. Be sure to number the problems and write neatly.**

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**Question 1 of 54**

Eric types at a rate of 16 words per minute.  
How many words does he type in 4 minutes?

**Question 2 of 54**

Lena buys 6.5 gallons of gas for \$26.78.  
Find the unit price in dollars per gallon.  
If necessary, round your answer to the nearest cent.

**Question 3 of 54**

Chang paid \$13.29 for a 7.03-kg bag of dog food. A few weeks later, he paid \$13.58 for a 7.26-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 7.03-kg bag:

\$\_\_\_\_\_ per kg

Unit price for the 7.26-kg bag:

\$\_\_\_\_\_ per kg

The better buy:

- The 7.03-kg bag
- The 7.26-kg bag
- Neither (They have the same unit price)

#### Question 4 of 54

Use a calculator to write  $\frac{73}{56}$  as a percentage.

Round your answer to the nearest tenth of a percent.

#### Question 5 of 54

Use a calculator to write  $\frac{4}{41}$  as a percentage.

Round your answer to the nearest tenth of a percent.

#### Question 6 of 54

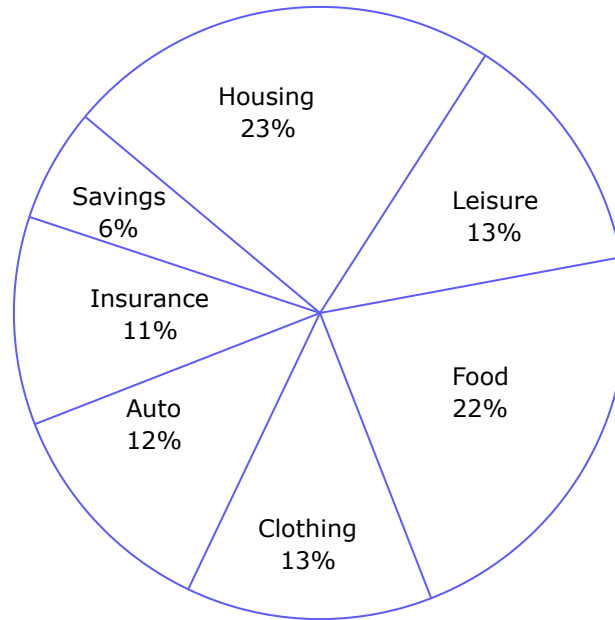
What is 56% of 85?

#### Question 7 of 54

Yolanda's chocolate bar is 52% cocoa. If the weight of the chocolate bar is 79 grams, how many grams of cocoa does it contain? Round your answer to the nearest tenth.

**Question 8 of 54**

The circle graph shows how a family budgets its annual income. If the total annual income is \$90,000, what amount is budgeted for Auto expenses?



**Question 9 of 54**

Answer the following questions.

(a) 65% of 60 is what number? \_\_\_\_\_

(b) 36 is 45% of what? \_\_\_\_\_

**Question 10 of 54**

Answer the following questions.

(a) 115% of what is 84.87? \_\_\_\_\_

(b) What number is 76.8% of 42.5? \_\_\_\_\_

**Question 11 of 54**

Suppose a charity received a donation of \$28.2 million. If this represents 38% of the charity's donated funds, what is the total amount of its donated funds?

Round your answer to the nearest million dollars.

### Question 12 of 54

The price of a cup of coffee has risen to \$2.55 today. Yesterday's price was \$2.20. Find the percentage increase. Round your answer to the nearest tenth of a percent.

### Question 13 of 54

The price of a notebook was \$3.70 yesterday. Today, the price fell to \$3.45. Find the percentage decrease. Round your answer to the nearest tenth of a percent.

### Question 14 of 54

A camera has a listed price of \$859.95 before tax. If the sales tax rate is 6.25%, find the total cost of the camera with sales tax included.

Round your answer to the nearest cent, as necessary.

### Question 15 of 54

An item is regularly priced at \$92. Martina bought it at a discount of 60% off the regular price.

Use a calculator to find how much Martina paid.

### Question 16 of 54

Leila deposits \$600 into an account that pays simple interest at a rate of 5% per year. How much interest will she be paid in the first 3 years?

### Question 17 of 54

Bob opened a savings account with \$9000 and was paid simple interest at an annual rate of 2%. When Bob closed the account, he was paid \$1080 in interest. How long was the account open for, in years?

**Question 18 of 54**

Evaluate the following.

$$|10| = \underline{\hspace{2cm}}$$

$$|-14| = \underline{\hspace{2cm}}$$

**Question 19 of 54**

Evaluate the following.

$$|-3| = \underline{\hspace{2cm}}$$

$$|13| = \underline{\hspace{2cm}}$$

**Question 20 of 54**

Evaluate the following.

$$|5| = \underline{\hspace{2cm}}$$

$$|-9| = \underline{\hspace{2cm}}$$

**Question 21 of 54**

Add.

$$-4 + (-2) =$$

$$4 + (-6) =$$

**Question 22 of 54**

Add.

$$-38 + (-42) =$$

$$-40 + 30 =$$

**Question 23 of 54**

Subtract.

$$4 - 7 = \square$$

$$-3 - 3 = \square$$

### Question 24 of 54

Subtract.

$$-7 - (-3) = \underline{\hspace{2cm}}$$

$$8 - (-4) = \underline{\hspace{2cm}}$$

### Question 25 of 54

Subtract.

$$-10 - (-2) = \underline{\hspace{2cm}}$$

$$-20 - 34 = \underline{\hspace{2cm}}$$

### Question 26 of 54

Evaluate the following.

$$-4 \times (-6) = \square$$

$$-28 \div 4 = \square$$

### Question 27 of 54

Evaluate the following.

$$10 \div (-5) = \square$$

$$-5 \times 3 = \square$$

### Question 28 of 54

Evaluate the following.

$$-2 \times (-5) = \square$$

$$48 \div (-8) = \square$$

### Question 29 of 54

Evaluate the following.

$$-6 \div 2 = \square$$

$$-7 \times (-4) = \square$$

### Question 30 of 54

Evaluate the following.

$$42 \div (-6) = \square$$

$$-3 \times 7 = \square$$

### Question 31 of 54

Evaluate the following.

$$-6 \times (-8) = \square$$

$$56 \div (-7) = \square$$

### Question 32 of 54

Write  $\frac{59}{20}$  as a decimal.

### Question 33 of 54

Write  $\frac{71}{18}$  as a decimal. If necessary, use a bar to indicate which digit or group of digits repeats.

**Question 34 of 54**

Write  $5\frac{7}{20}$  as a decimal.

**Question 35 of 54**

Write  $13\frac{9}{16}$  as a decimal.

**Question 36 of 54**

Let's compare  $\frac{5}{6}$  and  $\frac{8}{9}$ . First, write the fractions with the same denominator.

$$\frac{5}{6} = \frac{\square}{\square} \quad \frac{8}{9} = \frac{\square}{\square}$$

Then, use  $<$ ,  $=$ , or  $>$  to compare the fractions.

$$\frac{5}{6} \square \frac{8}{9}$$

**Question 37 of 54**

Let's compare  $\frac{4}{5}$  and  $\frac{3}{4}$ . First, write the fractions with the same denominator.

$$\frac{4}{5} = \frac{\square}{\square} \quad \frac{3}{4} = \frac{\square}{\square}$$

Then, use  $<$ ,  $=$ , or  $>$  to compare the fractions.

$$\frac{4}{5} \square \frac{3}{4}$$

**Question 38 of 54**

Order these numbers from least to greatest.

$$4\frac{1}{3}, 4.94, \frac{87}{20}, 4.334$$

**Question 39 of 54**



Order these numbers from least to greatest.

$$\frac{65}{8}, 8\frac{1}{11}, 8.135, 8.19$$

**Question 40 of 54**

Subtract.

$$\frac{3}{7} - \frac{2}{3}$$

Write your answer in simplest form.

**Question 41 of 54**

Evaluate.

$$\frac{1}{9} - \left(-\frac{4}{15}\right)$$

Write your answer in simplest form.

**Question 42 of 54**

Add.

$$-\frac{2}{5} + \frac{5}{6}$$

Write your answer in simplest form.

**Question 43 of 54**

Evaluate.

$$-\frac{6}{5} - \left(-\frac{1}{3}\right)$$

Write your answer in simplest form.

**Question 44 of 54**

Subtract. Write your answer as a mixed number in simplest form.

$$5\frac{5}{8} - 2\frac{2}{3}$$

**Question 45 of 54**

Add.

$$4\frac{7}{9} + 2\frac{7}{9}$$

Write your answer as a mixed number in simplest form.

**Question 46 of 54**

Add.

$$1\frac{7}{10} + 9\frac{9}{10}$$

Write your answer as a mixed number in simplest form.

**Question 47 of 54**

Multiply.

$$3\frac{1}{2} \times 1\frac{2}{5}$$

Write your answer as a mixed number in simplest form.

**Question 48 of 54**

Multiply.

$$\frac{5}{7} \times 2\frac{5}{8}$$

Write your answer as a mixed number in simplest form.

**Question 49 of 54**

Multiply.

$$6 \times 2\frac{7}{10}$$

Write your answer as a mixed number in simplest form.

### Question 50 of 54

Multiply.

$$\frac{1}{9} \left( -\frac{3}{7} \right)$$

Write your answer in simplest form.

### Question 51 of 54

Multiply.

$$\left( -\frac{5}{2} \right) \cdot \left( -\frac{2}{7} \right)$$

Write your answer in simplest form.

### Question 52 of 54

Evaluate the expression when  $b = 14$  and  $c = 6$ .

$$\frac{b+c^2}{b-2c}$$

Simplify your answer as much as possible.

### Question 53 of 54

Evaluate the expression when  $c = -3$  and  $y = 5$ .

$$-9y + c$$

### Question 54 of 54

Evaluate the expression when  $a = -4$  and  $y = 7$ .

$$a - 9y$$

SUMMER MATH PRACTICE 2 OF 2 FOR STUDENTS  
ENTERING PRE-ALGEBRA



Student Name : \_\_\_\_\_

Number of Questions: **60**

Instructor Note : **Work must be shown to receive credit. Use separate paper if necessary. Be sure to number the problems and write neatly.**

**Question 1 of 60**

Translate the phrase into an algebraic expression.

*The quotient of  $w$  and 8*

**Question 2 of 60**

Translate this phrase into an algebraic expression.

*Six more than the product of 15 and Gail's savings*

Use the variable  $g$  to represent Gail's savings.

**Question 3 of 60**

Use the distributive property to fill in the blanks below.

$$(7 \times 5) - (7 \times 3) = 7 \times (\underline{\quad} - \underline{\quad})$$

**Question 4 of 60**

Use the distributive property to fill in the blanks below.

$$(3 \times 1) + (3 \times 5) = 3 \times (\underline{\quad} + \underline{\quad})$$

**Question 5 of 60**

Simplify.

$$2u + 2v + 4v$$

**Question 6 of 60**

Simplify.

$$-4a + 4a - 2$$

**Question 7 of 60**

Simplify.

$$-9a^2 - 11a^2$$

**Question 8 of 60**

Simplify.

$$7.1u + 1.8u$$

**Question 9 of 60**

Simplify.

$$\frac{3}{5}y - \frac{1}{3}y$$

**Question 10 of 60**

Consider the following expression.

$$7v + 5u + 3 + 8u$$

Select *all* of the true statements below.

<input type="checkbox"/> $7v$ is a factor.
<input type="checkbox"/> $3$ is a constant.
<input type="checkbox"/> $7v$ is a term.
<input type="checkbox"/> $7v$ is a coefficient.
<input type="checkbox"/> $5u$ and $8u$ are like terms.
<input type="checkbox"/> None of these are true

**Question 11 of 60**

Simplify.

$$3(v + 5) - 6v$$

**Question 12 of 60**

Simplify.

$$-4y - 3(-3z + y) + z$$

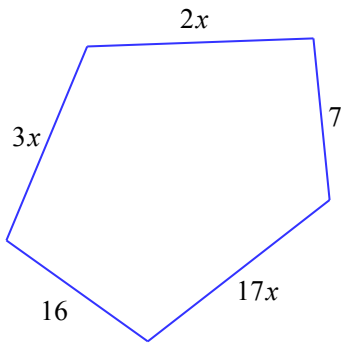
**Question 13 of 60**

Simplify.

$$-5(2y - 2z) + 3(-z - 7y)$$

**Question 14 of 60**

Write two expressions for the perimeter of the figure.



Note: The figure is not drawn to scale.

(a) Use all five side lengths.

$$\text{perimeter} = \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$$

(b) Simplify the expression from part (a).

$$\text{perimeter} = \underline{\hspace{2cm}}$$

### Question 15 of 60

Factor.

$$8v - 16$$

### Question 16 of 60

Factor.

$$8u + 12$$

### Question 17 of 60

Solve for  $w$ .

$$-5 + w = -8$$



**Question 18 of 60**

Solve for  $x$ .

$$x + \frac{2}{3} = 4\frac{3}{4}$$

**Question 19 of 60**

Solve for  $v$ .

$$-\frac{3}{5} + v = \frac{1}{2}$$

Simplify your answer as much as possible.

**Question 20 of 60**

Solve for  $u$ .

$$u - 2.6 = 4.47$$

**Question 21 of 60**

Solve for  $u$ .

$$2u = -18$$

Simplify your answer as much as possible.

**Question 22 of 60**

Solve for  $u$ .

$$-\frac{u}{2} = -58$$

Simplify your answer as much as possible.

**Question 23 of 60**

Solve for  $n$ .

$$9 = 45n$$

Simplify your answer as much as possible.

**Question 24 of 60**

Solve for  $u$ .

$$-\frac{2}{9}u = 6$$

Simplify your answer as much as possible.

**Question 25 of 60**

Solve for  $u$ .

$$4u = 6.4$$

**Question 26 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)  $x - 9 = 27$

<input type="checkbox"/> In a classroom, there are $x$ boys. There are 9 times as many girls as boys. There are 27 girls.
<input type="checkbox"/> There were $x$ boys in a classroom. Then 9 other boys entered. There are now 27 boys in the classroom.
<input type="checkbox"/> A classroom had $x$ students. Then 9 of them went home. There are now 27 students in the classroom.
<input type="checkbox"/> There were $x$ girls in a classroom. Then 9 of them left. There are now 27 girls in the classroom.
<input type="checkbox"/> None of the above

(b)  $8x = 56$

<input type="checkbox"/> A box had $x$ pencils. Then 8 pencils were removed from the box. The box now has 56 pencils.
<input type="checkbox"/> A box had $x$ pencils. Then 8 more pencils were placed in the box. The box now has 56 pencils.
<input type="checkbox"/> A box has 56 pencils. The pencils are aligned in 8 rows, with $x$ pencils in each row.
<input type="checkbox"/> A box has 8 pencils. Each pencil weighs $x$ grams. The 8 pencils weigh a combined total of 56 grams.
<input type="checkbox"/> None of the above

### Question 27 of 60

A construction crew has just built a new road. They built the road at a rate of 7 kilometers per week. They built 8.96 kilometers of road. How many weeks did it take them?

**Question 28 of 60**

Latoya needs to memorize words on a vocabulary list for Russian class. She has 15 words to memorize, and she is three-fifths done. How many words has Latoya memorized so far?

**Question 29 of 60**

Solve for  $w$ .

$$168 - w = 226$$

**Question 30 of 60**

Solve for  $u$ .

$$-6 + 2u = 8$$

Simplify your answer as much as possible.

**Question 31 of 60**

Solve for  $v$ .

$$6 + \frac{v}{10.24} = 10$$

**Question 32 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)  $48x - 24 = 408$

<input type="checkbox"/> A rental car company charges $x$ dollars per day. This month, there is also a discount of \$24 off the entire rental fee. Reuben rented a car for 48 days. He paid a total of \$408 after the discount.
<input type="checkbox"/> A rental car company charges $x$ dollars per day. This month, there is also a discount of \$48 off the entire rental fee. Reuben rented a car for 24 days. He paid a total of \$408 after the discount.
<input type="checkbox"/> A rental car company charges \$48 per day. This month, there is also a discount of \$24 off the entire rental fee. Reuben rented a car for $x$ days. He paid a total of \$408 after the discount.
<input type="checkbox"/> A rental car company charges \$24 per day. This month, there is also a discount of \$48 off the entire rental fee. Reuben rented a car for $x$ days. He paid a total of \$408 after the discount.
<input type="checkbox"/> None of the above

(b)  $8x + 12 = 132$

<input type="checkbox"/> Ivanna bought copies of a book from a website. She then received a discount for \$12 off her entire purchase. The website charges $x$ dollars for each copy, and Ivanna bought 8 copies. She spent a total of \$132 after the discount.
<input type="checkbox"/> Ivanna bought copies of a book from a website. There was a shipping fee of \$12 for the entire purchase. The website charges $x$ dollars for each copy, and Ivanna bought 8 copies. She spent a total of \$132 including the shipping fee.
<input type="checkbox"/> Ivanna bought copies of a book from a

website. She then received a discount for \$12 off her entire purchase. The website charges \$8 for each copy, and Ivanna bought  $x$  copies. She spent a total of \$132 after the discount.

Ivanna bought copies of a book from a website. There was a shipping fee of \$12 for the entire purchase. The website charges \$8 for each copy, and Ivanna bought  $x$  copies. She spent a total of \$132 including the shipping fee.

None of the above

### Question 33 of 60

Answer the questions below.

(a) The perimeter of a rectangular field is 366 m.  
If the length of the field is 99 m, what is its width?  
Width of the field: \_\_\_\_\_ m

(b) The area of a rectangular painting is  $7030 \text{ cm}^2$ .  
If the width of the painting is 74 cm, what is its length?  
Length of the painting: \_\_\_\_\_ cm

### Question 34 of 60

Solve the inequality for  $u$ .

$$-15 > -16 + u$$

Simplify your answer as much as possible.

### Question 35 of 60

Solve the inequality for  $w$ .

$$w + \frac{7}{8} \leq \frac{1}{2}$$

Simplify your answer as much as possible.

### Question 36 of 60

Solve the inequality for  $v$ .

$$-1.9 + v \leq -5.8$$

Simplify your answer as much as possible.

### Question 37 of 60

Solve the inequality for  $x$ .

$$-4x > -12$$

Simplify your answer as much as possible.

### Question 38 of 60

Solve the inequality for  $x$ .

$$9 + \frac{x}{5} \geq 3$$

Simplify your answer as much as possible.

### Question 39 of 60

Solve the inequality for  $x$ .

$$36 \leq 11 + 5x$$

Simplify your answer as much as possible.

### Question 40 of 60

Tammy will run more than 36 miles this week. So far, she has run 19 miles. What are the possible numbers of additional miles she will run?

Use  $t$  for the number of additional miles she will run.

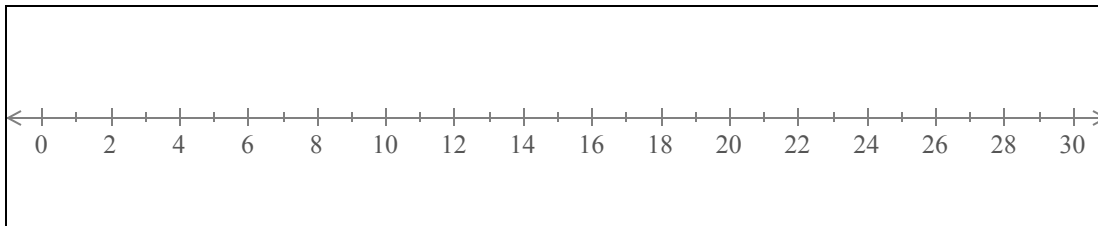
Write your answer as an inequality solved for  $t$ .

### Question 41 of 60

A construction crew is lengthening a road. The crew is adding 3 miles to the road each week. The road originally measured 62 miles long. The crew's goal is given by  $3x + 62 \geq 110$ , where  $x$  is the number of weeks the crew works.

Complete the parts below.

- (a) Solve the given inequality and graph the solution on the number line below.



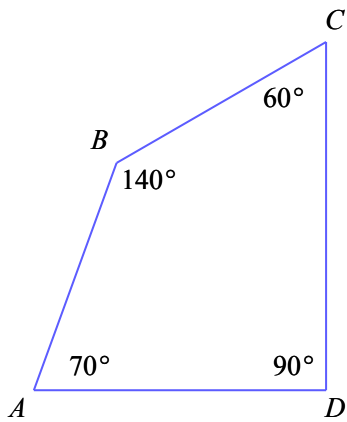
- (b) Choose and complete the statement that best describes the solution.

- The crew's goal is to lengthen the road to at least \_\_\_\_\_ miles.  
This will take at least \_\_\_\_\_ weeks.
- The crew's goal is to lengthen the road to at most \_\_\_\_\_ miles.  
This will take at least \_\_\_\_\_ weeks.
- The crew's goal is to lengthen the road to at least \_\_\_\_\_ miles.  
This will take at most \_\_\_\_\_ weeks.

### Question 42 of 60



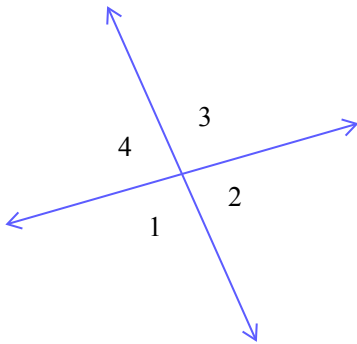
Classify the four angles of the quadrilateral.



	Right	Acute	Obtuse
$\angle A$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
$\angle B$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
$\angle C$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
$\angle D$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

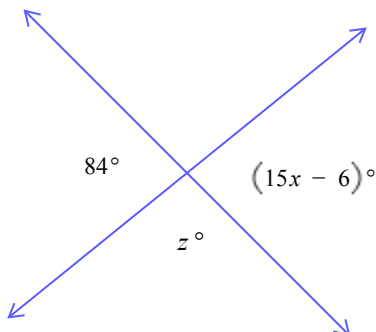
**Question 43 of 60**

In the figure below,  $m\angle 1 = 98^\circ$ . Find  $m\angle 2$ ,  $m\angle 3$ , and  $m\angle 4$ .



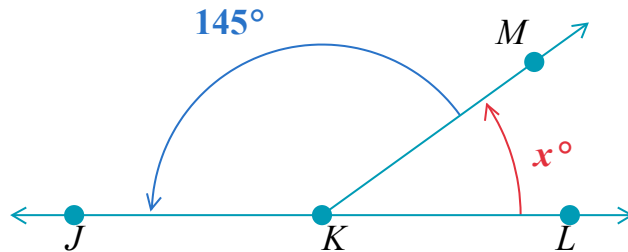
**Question 44 of 60**

Given the figure below, find the values of  $x$  and  $z$ .



**Question 45 of 60**

Angle  $JKL$  is a straight angle.  
The measure of angle  $JKM$  is  $145^\circ$ .  
The measure of angle  $MKL$  is  $x^\circ$ .  
What is the value of  $x$ ?

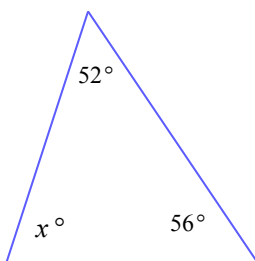


**Question 46 of 60**

- (a) An angle measures  $63^\circ$ . What is the measure of its complement?
- (b) An angle measures  $48^\circ$ . What is the measure of its supplement?

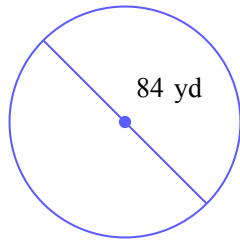
**Question 47 of 60**

Find the value of  $x$ .



**Question 48 of 60**

The figure below shows a circular park.  
Its diameter is 84 yd.



- (a) Use the calculator to find the area and circumference of the park.  
Use 3.14 for  $\pi$  in your calculations, and do not round your answers.  
Make sure to include the correct units.

Area:

Circumference:

- (b) A rope will be placed around the park.  
Which measure would be used in finding the amount of rope needed?

- Circumference
- Area

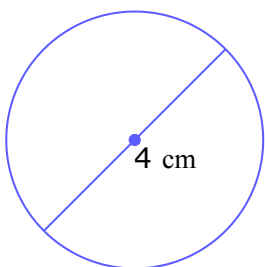
- (c) The park will be covered by artificial turf.  
Which measure would be used in finding the amount of turf needed?

- Circumference
- Area

### Question 49 of 60

Find the circumference and the area of a circle with diameter 4 cm.

Use the value 3.14 for  $\pi$ , and do not round your answers. Be sure to include the correct units in your answers.



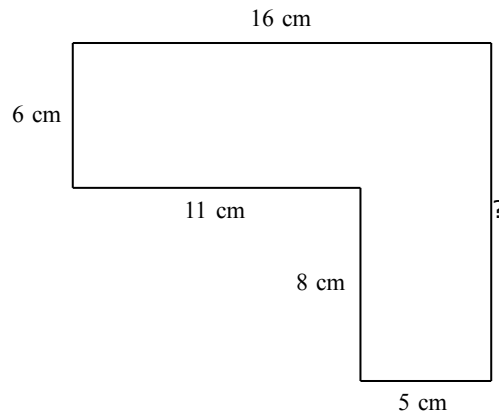
### Question 50 of 60

The circumference of a circular field is 282.6 yards. What is the diameter of the field? Use 3.14 for  $\pi$  and do not round your answer.

### Question 51 of 60

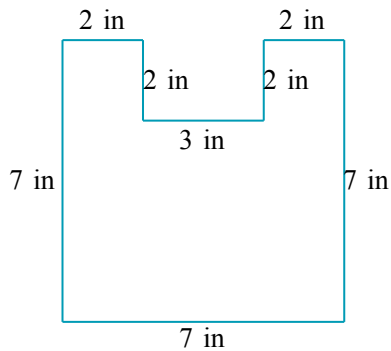
Find the missing side length.

Assume that all intersecting sides meet at right angles.  
Be sure to include the correct unit in your answer.



### Question 52 of 60

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



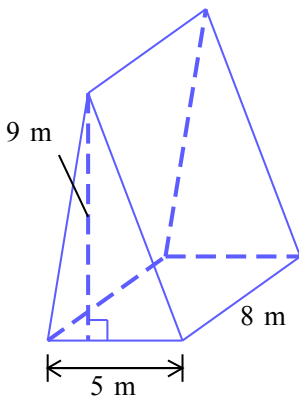
### Question 53 of 60

A concrete foundation for a building has the shape of a rectangular prism. The foundation is 14 yards long, 12 yards wide, and 2 yards high. If concrete costs \$4 per cubic yard, how much did the concrete cost for the foundation?

### Question 54 of 60

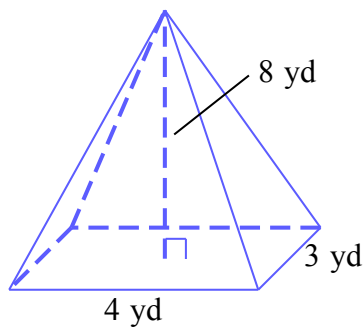
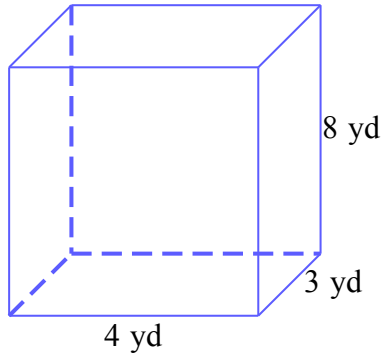
Find the volume of this triangular prism.

Be sure to include the correct unit in your answer.



**Question 55 of 60**

The rectangular prism and rectangular pyramid shown below have the same length, same width, and same height.



Complete the following.

(a) Volume of the prism: \_\_\_\_\_  $\text{yd}^3$

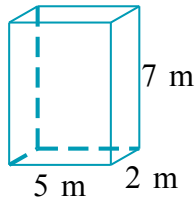
(b) Volume of the pyramid: \_\_\_\_\_  $\text{yd}^3$

(c) Volume of the pyramid = \_\_\_\_\_  $\times$  Volume of the prism

- This equation is true for all rectangular prisms and rectangular pyramids with the same length, same width, and same height.
- This equation is true for all rectangular prisms and rectangular pyramids.
- This equation is true only for the rectangular prism and rectangular pyramid shown above.

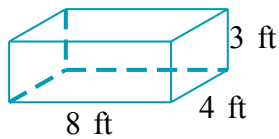
**Question 56 of 60**

A company makes storage containers with sheet steel walls. The containers are shaped like rectangular prisms, as shown below. If the company has a total of  $944 \text{ m}^2$  of sheet steel available, how many storage containers can be made?



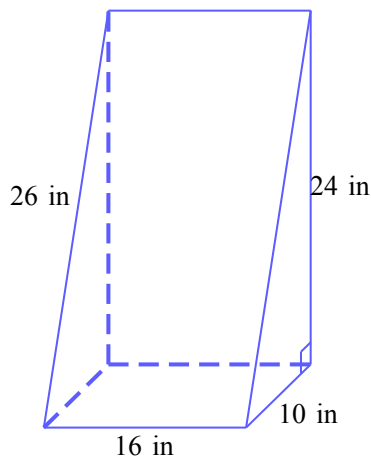
### Question 57 of 60

Salma is going to build a large wooden storage box. The box will be in the shape of a rectangular prism, as shown below. She wants to cover all the sides of the box with special wallpaper that costs \$5 per square foot. How much will the wallpaper cost in total?



### Question 58 of 60

Find the surface area of this triangular prism. Be sure to include the correct unit in your answer.



### Question 59 of 60

Kennedy High School is going to select a committee. The committee will have a faculty member, a male student, a female student, and a parent.

Here are the positions and the people interested in each.

Position	People interested
Faculty member	Mrs. Ramirez, Ms. Ward, Dr. Brooks
Male student	Sam, Ravi, Austin, Ahmad, Rafael
Female student	Mary, Charmaine, Maria, Keisha, Kaitlin
Parent	Mrs. Richardson, Ms. King, Mrs. Tran, Dr. James

Based on this list, how many ways are there to fill the four committee positions?

### Question 60 of 60

There are 4 runners in a race. There will be a first-place, a second-place, and a third-place prize awarded. In how many different ways can the 3 prizes be awarded?