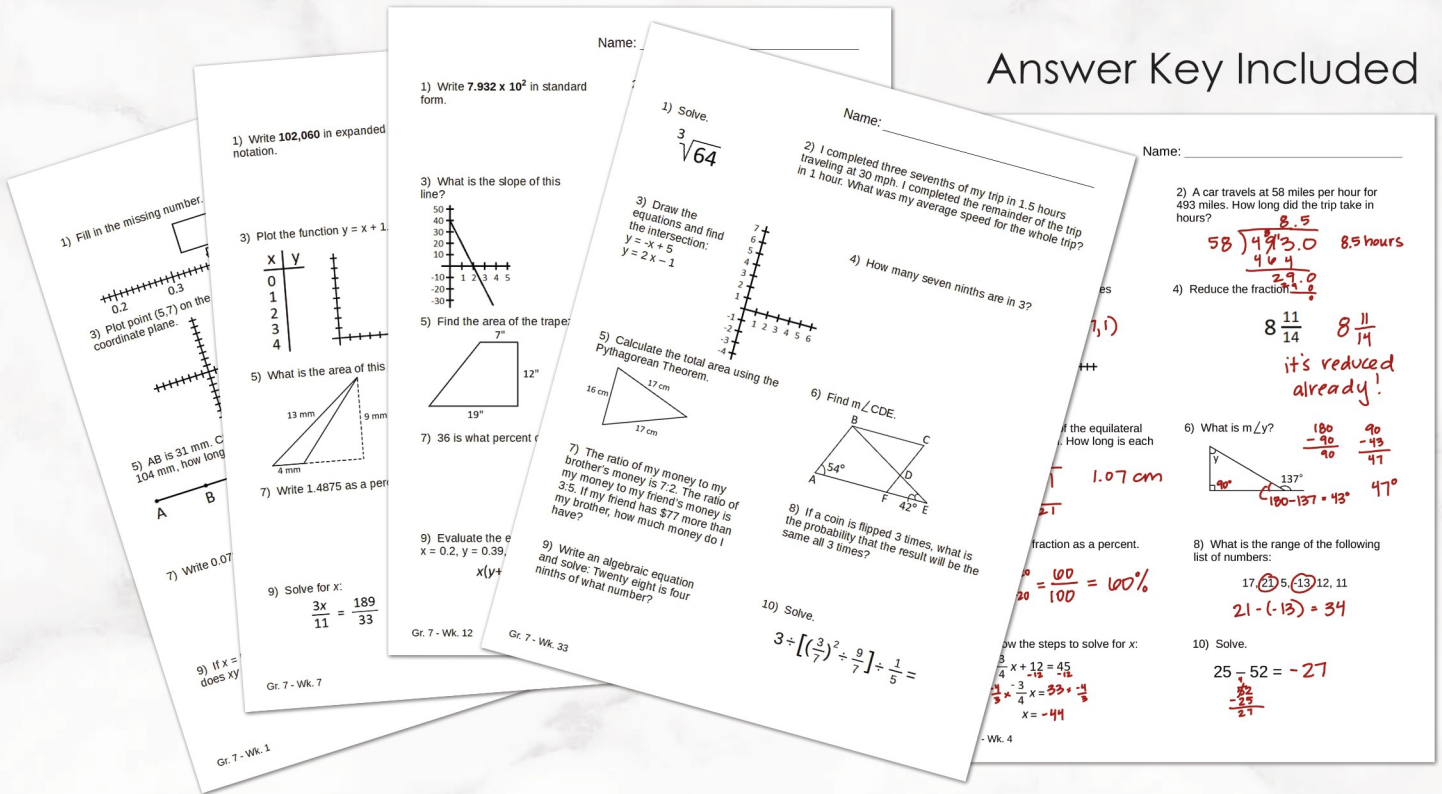


MINIMALIST MATH

7th Grade Curriculum

Answer Key Included



36 Week Curriculum

10 problems per week

Topics Covered:

- Understanding Numbers
- Word Problems
- Graphs, Charts, & Tables
- Fractions
- Length, Area, and Volume
- Angles
- Ratios & Percents
- Statistics & Probability
- Algebra
- Calculations

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Dear fellow educator,

It is easy for kids to feel overwhelmed by math. Most traditional curricula involve a vast amount of work. However, the concepts that kids are required to know by the end of the year can be summarized fairly succinctly. This curriculum takes out all of the repetition, while keeping the full breadth and range of difficulty of problem types seen at this grade level. This allows students to focus on those concepts and see the big picture.

Whether you are using this curriculum as a full homeschool curriculum, to accelerate student progress, to identify weaknesses, or as a summer review, I hope it is helpful to you!

If you would like an answer key to go along with this curriculum, all of my curriculum and answer keys for Grade 1 through Algebra 1, plus task cards and mastery checklists are included in my **\$5 Patreon membership**. Instead, you could also purchase this grade level individually on **Etsy**.

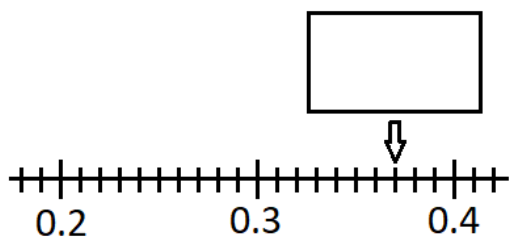
Warmly,

Michelle Scharfe, Ph.D. of **ResearchParent.com**

P.S. As someone who is interested in education, you might enjoy this **free curated library** I am creating full of learning resources for kids of all ages! 😊

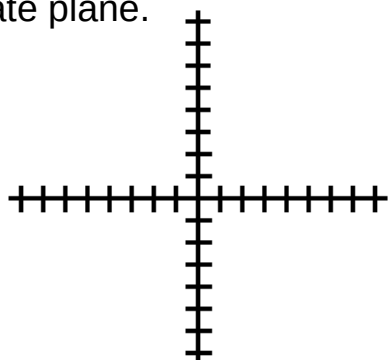
Name: _____

1) Fill in the missing number.



2) Great Grandpa turned 93 in 2020. In what year was he born?

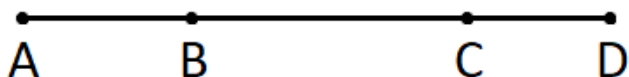
3) Plot point (5,7) on the coordinate plane.



4) What fraction of the rectangle is shaded?



5) AB is 31 mm. CD is 27 mm. If AD is 104 mm, how long is BC?



6) What do you call two angles that add to 180 degrees?

7) Write 0.072 as a percent.

8) What is the mean of the following list of numbers:

47, 43, 36, 43, 31, 52

9) If $x = 5$ and $y = 9$, then what does xy equal?

10) Solve.

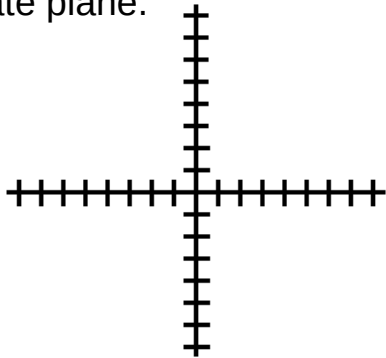
$$75.2 - 0.86 =$$

Name: _____

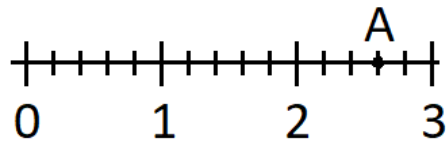
1) Write **thirty one and seven hundredths** as a decimal number and a mixed number.

2) The population of a town is 127,320 this year and 118,967 five years ago. How much did the population increase?

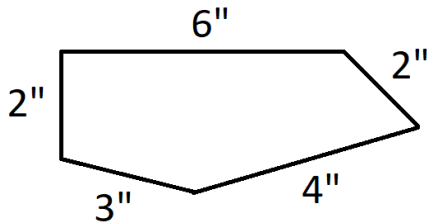
3) Plot point $(-2, -6)$ on the coordinate plane.



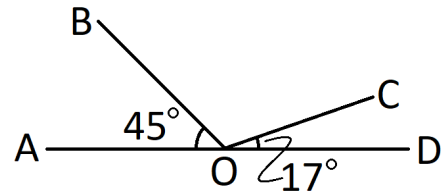
4) What mixed number is represented by point A on the number line?



5) What is the perimeter of this pentagon?



6) AOD is a straight line. Find $\angle BOC$.



7) Fill in the missing number in these equivalent ratios.

$$\begin{array}{l} 7 : 8 \\ 28 : \boxed{} \end{array}$$

8) What is the median of the following list of numbers:

105, 22, 37, 54, 73, 111, 91

9) Follow the steps to solve for y :

$$3y + 7 = 31$$

$$3y =$$

$$y =$$

10) Solve.

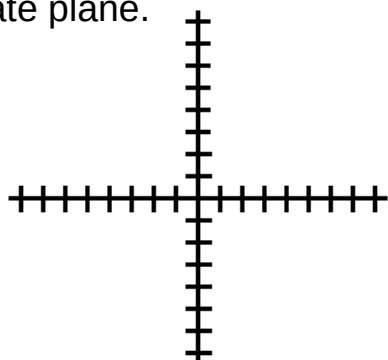
$$0.42 \times 0.7 =$$

Name: _____

1) Round **532.7614** to the hundredths place.

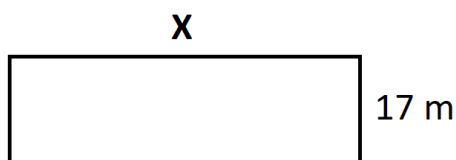
2) I travel $7\frac{1}{2}$ miles on my bike in 60 minutes. What is my average speed per hour?

3) Plot point (3,-4) on the coordinate plane.



4) Draw and shade circles to show fifteen fourths.

5) If the perimeter of this rectangle is 126 m, what is **X**?



6) What are two angles that add to 90 degrees called?

7) Write 32% as a reduced fraction.

8) What is the range of the following list of numbers:

65, 42, 73, 97, 54, 80

9) Follow the steps to solve for a :

$$52 = 7a - 25$$

$$7a =$$

$$a =$$

10) Solve.

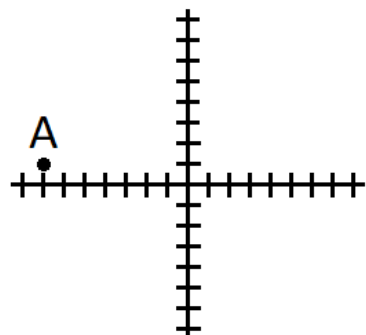
$$0.8 \div 5 =$$

Name: _____

1) Round **49,217.86053** to the nearest thousandth.

2) A car travels at 58 miles per hour for 493 miles. How long did the trip take in hours?

3) What are the coordinates of point **A** on the graph?

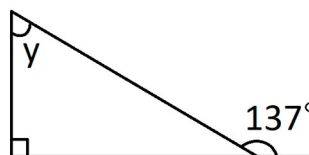


4) Reduce the fraction.

$$8 \frac{11}{14}$$

5) The perimeter of the equilateral triangle is 3.21 cm. How long is each side?

6) What is $m\angle y$?



7) Write the fraction as a percent.

$$\frac{3}{5}$$

8) What is the range of the following list of numbers:

17, 21, 5, -13, 12, 11

9) Follow the steps to solve for x :

$$-\frac{3}{4}x + 12 = 45$$

$$-\frac{3}{4}x =$$

$$x =$$

10) Solve.

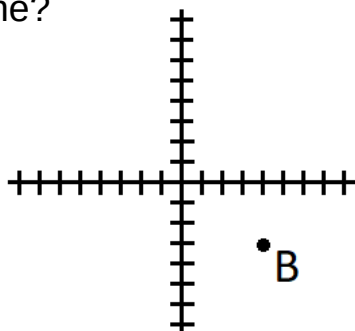
$$25 - 52 =$$

Name: _____

1) Write **3 hundredths 9 tenths 15 ones** as a decimal.

2) Six hundred and forty six books are packed into 38 boxes. If the books are divided evenly, how many books are in each box?

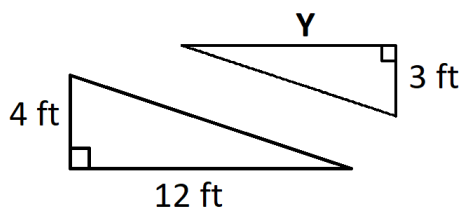
3) What are the coordinates of point **B** on the coordinate plane?



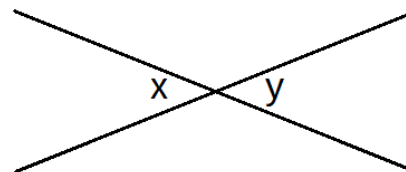
4) Write as an improper fraction.

$$3\frac{5}{7}$$

5) These two triangles are similar. What is the length of **Y**?



6) Angles **x** and **y** are known as what type of angles?



7) If the ratio of adults to kids is 3:2, what is the ratio of kids to total number of people?

8) What is the mode of the following list of numbers:

1.1, 3.4, 1.2, 2.8, 1.1

9) Solve for m :

$$\frac{m}{12} = \frac{37}{6}$$

$$m =$$

10) Solve.

$$- 31 + (-47) =$$

Name: _____

1) Five and two hundredths is how much less than five and two tenths? Write the answer in words.

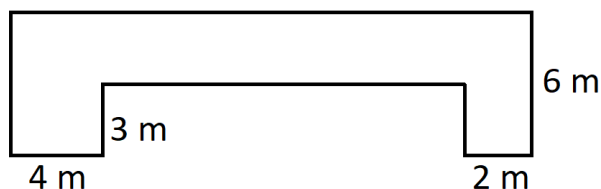
2) A container measuring 210 cm by 30 cm by 40 cm is being filled at a rate of 14 liters per minute. How long does it take to fill the container completely?
(1 L = 1000 cm³)

3) Make a table for the function $y = 3x - 4$.

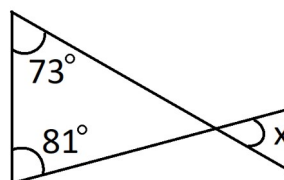
x	y

$$\text{GCF} = \frac{18}{48} =$$

5) What is the area of this polygon?
14 m



6) What is $m\angle x$?



7) Write the whole number as a percent.

3

8) What is the mode of the following list of numbers:

17, 12, 13, 17, 19, 10, 13, 11, 13

9) Solve for c:

$$\frac{42}{c} = \frac{7}{8}$$
$$c =$$

10) Solve.

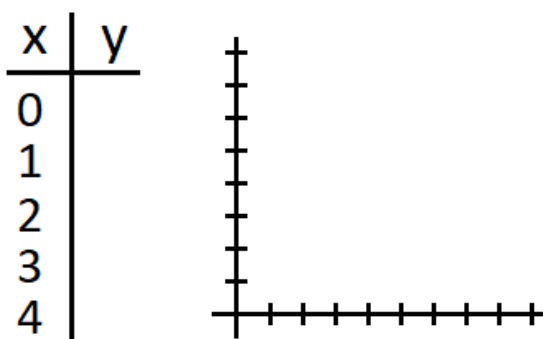
$$5^4 =$$

Name: _____

1) Write **102,060** in expanded notation.

2) The yearly subscription price for a magazine is \$35.40. The regular monthly price is \$3.50. How much is saved per issue by paying the subscription price.

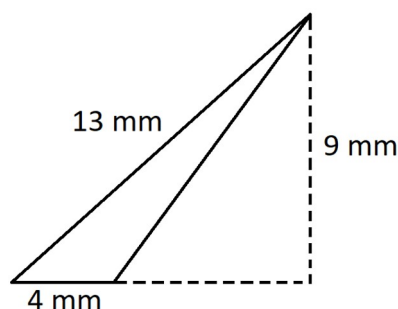
3) Plot the function $y = x + 1$.



4) Find the least common multiple of 6 and 8 then use it to add the fractions.

$$\text{LCM} = \frac{1}{6} + \frac{5}{8} =$$

5) What is the area of this triangle?



6) If two angles of a triangle each measure 43° , what is the measure of the third angle?

7) Write 1.4875 as a percent.

8) What is the average of the following numbers:

$$2\frac{5}{6}, 4, 8\frac{1}{2}, 5\frac{1}{3}$$

9) Solve for x:

$$\frac{3x}{11} = \frac{189}{33}$$

10) Solve.

$$1,732^0 =$$

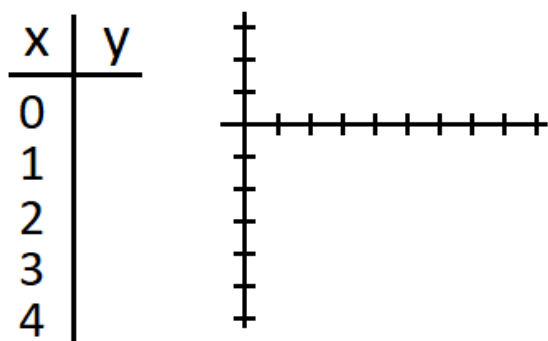
Name: _____

1) Solve.

$$2^7 =$$

2) I can run at 9 km per hour. If it is 0.6 km to the library, how many minutes does it take to run there?

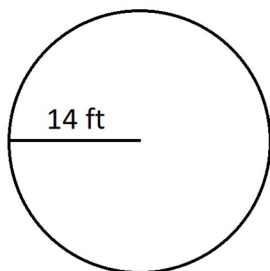
3) Plot the equation $y = -2x + 3$.



4) Add the fractions.

$$7\frac{5}{6} + 4\frac{7}{10} =$$

5) What is the circumference of the circle? Express answer in terms of π .



6) How many degrees is one sixth of a full circle?

7) Write the mixed number as a percent.

$$2\frac{3}{4}$$

8) How much less is the median of these numbers than the mean?

1.7, 0.3, 5.2, 2.6, 9.8

9) Solve for x:

$$1\frac{4}{7}x - 21 = 34$$

10) Solve.

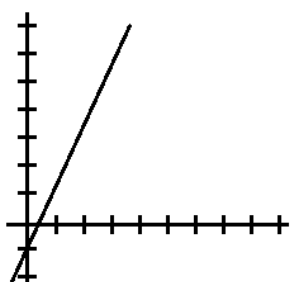
$$\sqrt{169} =$$

Name: _____

1) Write **197,000** in scientific notation.

2) In a group, some children just like soccer, some just like baseball, and some like both sports. 28 children like soccer and 19 like baseball. Of these, 14 like both sports. How many children are in the group?

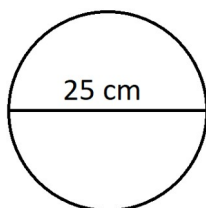
3) What is the slope of the function $y = 2x - 1$?



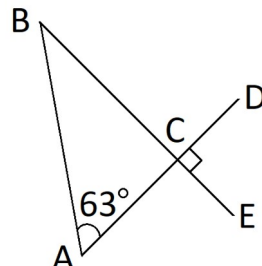
4) Solve the inequality.

$$\frac{7}{9} \bigcirc \frac{11}{15}$$

5) What is the area of the circle. Use 3.14 for π .



6) Find the $m\angle B$.



7) Write 1,217% as a number.

8) The mean of 4 numbers is 81. If 3 of the numbers are 88, 77, and 92, what is the fourth number?

9) Solve for m :

$$-0.7m + 1.4 = 5.6$$

10) Solve.

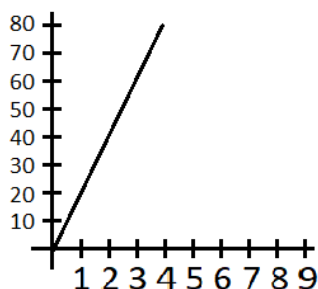
$$(4 + 5)^2 \cdot (15 - 13)^3 =$$

Name: _____

1) Write **32 thousandths** in scientific notation.

2) Grass costs \$1.63 per square foot. Your yard is 45 feet long. If you don't want to spend more than \$900, what is the maximum width of your lawn?

3) What is the slope of this line?

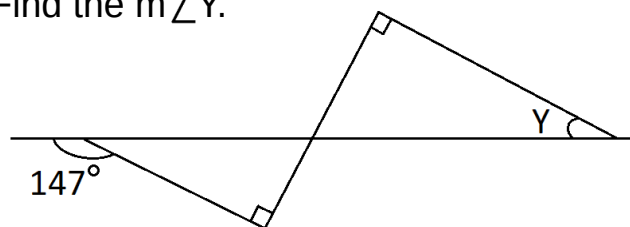


4) Solve the inequality.

$$\frac{36}{56} \bigcirc \frac{9}{14}$$

5) If the side of the square measures $\sqrt{17}$ cm, what is its area?

6) Find the $m\angle Y$.



7) If I can make 12 bracelets in 45 minutes, how many can I make in one hour?

8) If I can run 5 laps in 7 minutes 25 seconds, what is the average number of seconds it takes per lap?

9) Solve for x:

$$\frac{-5x + 8}{4} = \frac{8 - x}{3}$$

10) Solve.

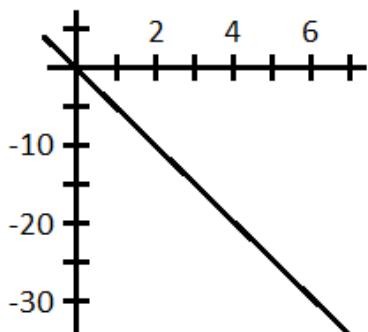
$$\frac{3}{7} \times 0.6 =$$

Name: _____

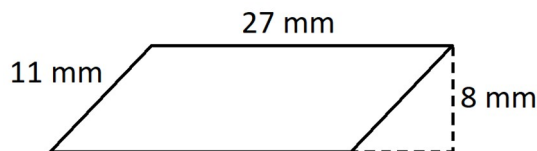
1) Write **53 billion** in scientific notation.

2) I am a two digit number. My first digit is 1.5 times my second digit. The sum of my digits is 15. What number am I?

3) What is the slope of this line?



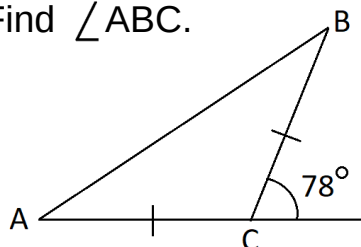
5) What is the area of this parallelogram?



4) Find the least common multiple of 7 and 3 and use it to subtract the fractions.

$$8\frac{3}{7} - 4\frac{1}{3} =$$

6) $\triangle ABC$ is an isosceles triangle. Find $\angle ABC$.



7) Fill in the missing number in the equivalent ratios.

$$\frac{3}{7} = \frac{\boxed{}}{371}$$

8) The total number of visitors at an amusement park during one week was 9,205. What was the average number of visitors per day?

9) Solve for x:

$$-\left(\frac{3+2x}{7}\right) + 1 = \frac{6x-1}{2}$$

10) Solve.

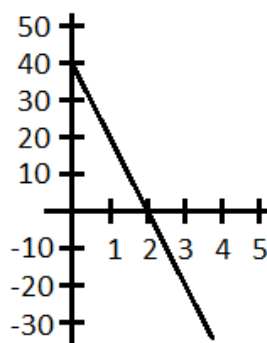
$$8\frac{1}{3} - 2.4 - 5\frac{1}{5} =$$

Name: _____

1) Write 7.932×10^2 in standard form.

2) I am a 4 digit number. The sum of my digits is 19. The sum of my first and second digits equals my last digit. My first digit is 80% of my last digit. What number am I?

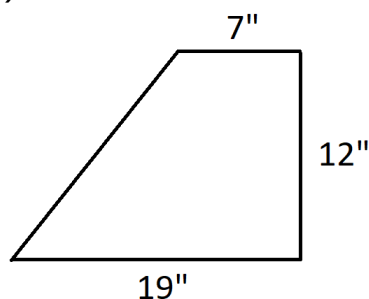
3) What is the slope of this line?



4) Subtract the fractions.

$$11\frac{1}{8} - 5\frac{2}{3} =$$

5) Find the area of the trapezoid.



6) $\triangle ABC$ is an isosceles triangle with $\angle A = 26^\circ$. What are 3 possible values of $\angle B$?

7) 36 is what percent of 300?

8) A bag contains 3 blue marbles, 1 red marble, and 6 yellow marbles. What is the probability of drawing a red marble?

9) Evaluate the expression for $x = 0.2$, $y = 0.39$, and $z = 2.7$.

$$x(y+z)$$

10) Solve.

$$8\frac{3}{4} \div 3.5 =$$

Name: _____

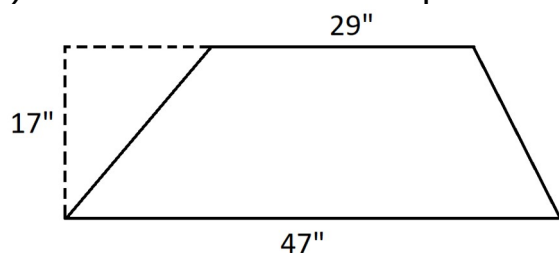
1) Write 8.1×10^{-3} in standard form.

2) My age will be 3 times my current age in 34 years. How old am I?

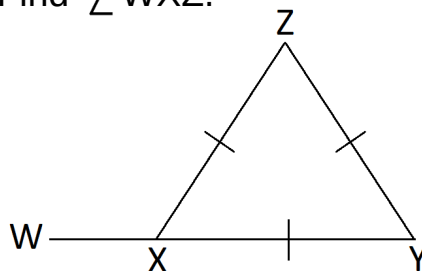
3) What is the slope of the equation $y = 52x - 7$?

4) There are oatmeal, chocolate chip, and peanut butter cookies on a plate. Two fifths of the cookies are peanut butter and one third are oatmeal. What fraction are chocolate chip?

5) Find the area of the trapezoid.



6) $\triangle XYZ$ is an equilateral triangle. Find $\angle WXZ$.



7) What number is 21% of 290?

8) A bag contains 3 blue marbles, 7 red marbles, and 10 yellow marbles. What is the probability of drawing a red or blue marble?

9) Simplify the expression:

$$5x + 2 + 3x - 4$$

10) Solve.

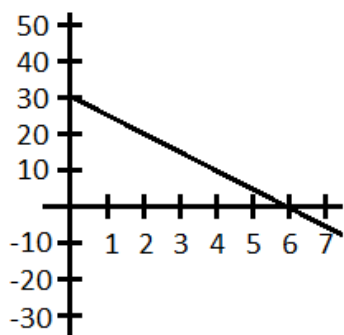
$$3\frac{5}{6} - 7\frac{1}{3} =$$

Name: _____

1) Write the repeating decimal **0.17171717...** using a horizontal line over the repeated part (repetend).

2) The distance around a field is 630 m. I ran around the field 7 times in half an hour. What is my average pace in meters per min?

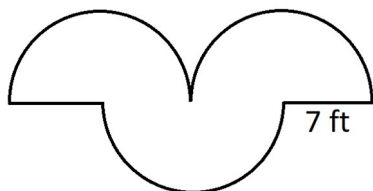
3) What is the y-intercept of this line?



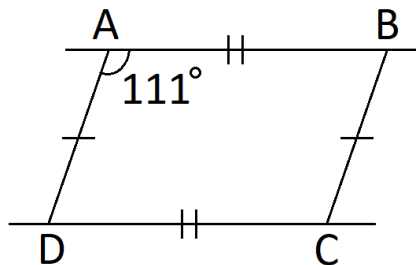
4) Write the fraction as a decimal.

$$-\frac{737}{10}$$

5) What is the perimeter of this shape? Express answer in terms of π .



6) ABCD is a parallelogram. What is $m\angle ABC$?



7) 264 is 55% of what number?

8) A bag contains 16 blue marbles, 3 red marbles, and 7 yellow marbles. What is the probability of drawing a marble that is not red?

9) Simplify the expression:

$$12xy + 3x - 5xy + x$$

10) Solve.

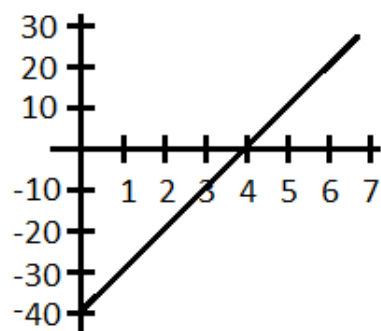
$$-8\frac{5}{8} - 11\frac{5}{6} =$$

Name: _____

1) Write $3\frac{17}{22}$ as a decimal using bar notation.

2) A metal ball with volume 832 cm^3 is melted and molded into 13 identical cubes. What is the length of each edge of each cube?

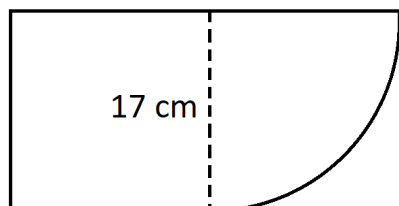
3) What is the y-intercept of this line?



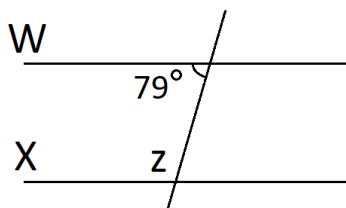
4) Write the decimal as a fraction.

-0.00037

5) This figure is made up of a square and a quadrant. What is its perimeter?



6) W is parallel to X. ($W \parallel X$)
Find $\angle z$.



7) Fill in the missing number in these equivalent ratios.

$$\frac{27}{15} = \frac{\boxed{}}{35}$$

8) What is the probability of rolling a prime number with one roll of a 6-sided die?

9) Simplify the expression:

$$(5y)(2y)$$

10) Solve.

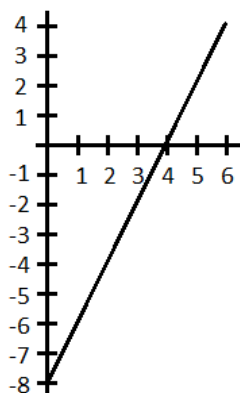
$$(-12)(-6)(-9) =$$

Name: _____

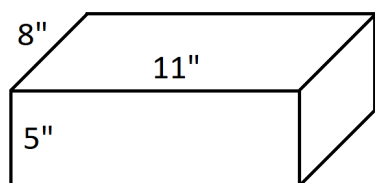
1) The product of **55** and **27** is divided by the sum of **19** and **14**. What is the quotient?

2) Thirty trees are planted along a road. The total distance between the first and last tree is 81.2 yards. What is the distance between the 2nd and 7th tree?

3) What is the y-intercept of the equation, $y = 2x - 8$?



5) What is the volume of this rectangular prism?

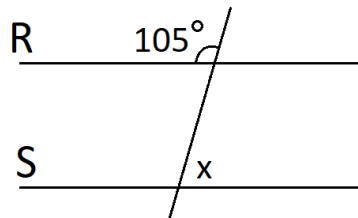


7) I spent \$36 on a shirt that normally costs \$48. What was the percentage discount?

4) Write the fraction as a decimal.

$$\frac{3,179}{100,000}$$

6) $R \parallel S$. What is $m \angle x$?



8) What is the probability of rolling a prime number with one roll of a 20-sided die?

9) Simplify the expression:

$$\frac{(3x)(4xy)(7y)}{12y}$$

10) Solve.

$$-242 \div 11 \div (-2) =$$

Name: _____

1) Complete the sequence. **1, 4, 9, 16,** _____, _____, _____, _____, _____

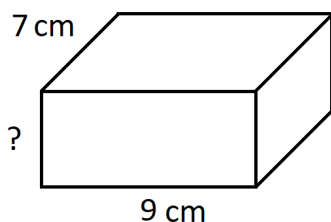
2) I completed 5 km at a pace of 2.5 km/hr. My friend completed the same distance at a pace of 3 km/hr. How many more minutes did I take than my friend?

3) What is the y-intercept of the function $y = 31x - 15$?

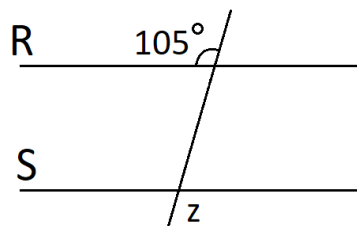
4) Write the decimal as a mixed number and reduce.

7.000062

5) The volume of this shape is 189 cm^3 . Find the missing dimension.



6) $R \parallel S$. What is $m \angle z$?



7) A game that costs \$29 is discounted 25%. What is the new price?

8) If a coin is flipped twice, what is the probability that the result will be the same both times?

9) Simplify the expression:

$$\frac{(-7bc)(8ab)}{-4ac}$$

10) Solve.

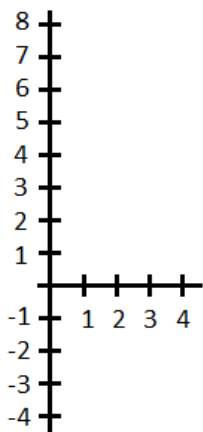
$$-\frac{7}{6} \div \frac{9}{8} =$$

Name: _____

1) Use digits to write **five million thirty thousand two**.

2) An airplane traveled the first 119 miles of a flight at 17 miles per minute. Then it traveled another 13 minutes at 15 miles per minute. Find the average rate of speed of the airplane for the whole flight.

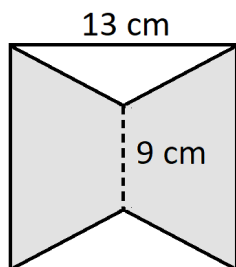
3) Draw a line that has a slope of -3 and goes through the point (0,8).



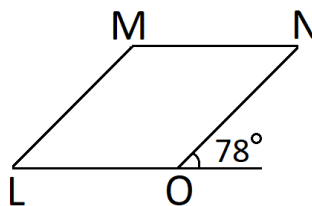
4) Write the fraction as a decimal.

$$\frac{14}{25}$$

5) Two trapezoids are placed inside a square. Calculate the area of the shaded region.



6) LMNO is a rhombus. Find $m\angle N$.



7) Our family has completed 20% of our 4,085 mile road trip so far. How many miles remain?

8) If two coins are flipped, what is the probability that one will be heads and one will be tails?

9) If $x = 0.9$, then fill in the missing comparison symbol.

$$x \bigcirc x^2$$

10) Solve.

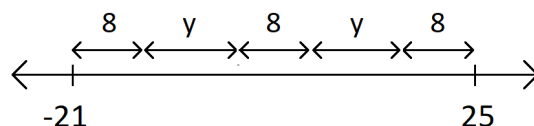
$$\left(\frac{\frac{5}{7}}{\frac{3}{4}} \right)^2 =$$

Name: _____

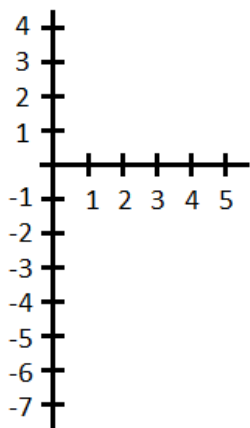
1) Arrange from least to greatest.

$$7, -\frac{1}{7}, 0.77, -7$$

2) Write an equation for this number line diagram and solve it to find the value of y .



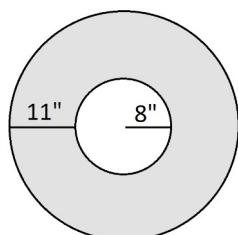
3) Draw a line that has a slope of 2 and a y -intercept of -7.



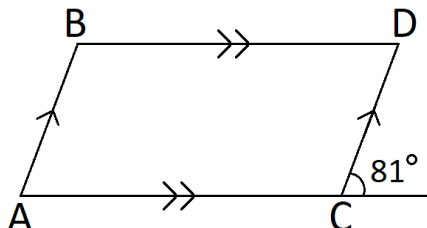
4) Reduce the fraction.

$$\frac{5 \times 5 \times 3 \times 7}{3 \times 5 \times 7 \times 8}$$

5) This figure is made up of two concentric circles. What is the area of the shaded part. Express the answer in terms of π .



6) ABCD is a parallelogram. Find $\angle ABD$.



7) My allowance is five thirds of my sister's allowance. Find the ratio of my allowance to our total allowance.

8) If a coin is flipped twice, what is the probability that first it will land on heads, then it will land on tails?

9) If $e - f = 0$, then fill in the missing comparison symbol.

$$e \bigcirc f$$

10) Solve.

$$(5 \times 10^6)(7 \times 10^{-3}) =$$

Name: _____

1) What is the greatest common factor of **32** and **48**?

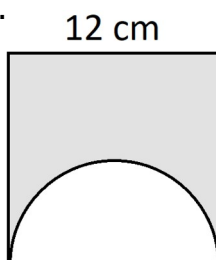
2) A child is 7 years old and his dad is 37. How many years will it take for the dad's age to be 3 times the age of his child?

3) Write an equation for the line that has a slope of 7 and goes through the point (0,9).

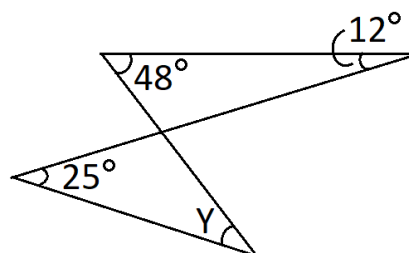
4) Multiply the fractions.

$$\frac{18}{33} \times \frac{11}{9} =$$

5) This figure is made up of a square and a semicircle. What is the area of the shaded part. Use 3.14 for π .



6) Find the measure of angle Y.



7) The ratio of my age to my brother's age is 7:11. If I am 14 years old now, how old will my brother be in 6 years?

8) If a coin is flipped 3 times, what is the probability that at least one of the flips lands on heads?

9) Factor the sum.

$$21x + 14 = \underline{\hspace{1cm}} (\underline{\hspace{1cm}} x + \underline{\hspace{1cm}})$$

10) Solve.

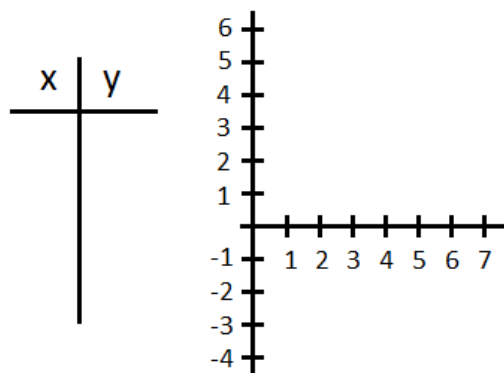
$$\frac{3 \times 10^{10}}{9 \times 10^7} =$$

Name: _____

1) Use digits and symbols to write **negative seven is greater than negative seventy**.

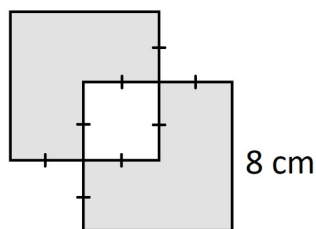
2) A pair of shorts plus a shirt costs \$35. Five shirts and 2 shorts cost \$112. How much does each shirt cost?

3) Graph the equation $x + y = 5$.

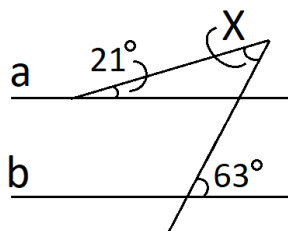


4) I can make a potholder in five sixths of an hour. If I work for 9 hours, how many potholders can I make?

5) The figure is made of two identical squares. What is the area of the shaded region?



6) Find the measure of $\angle X$ given that $a \parallel b$.



7) The farm has 9 chickens for every 4 goats. If there are 423 chickens, how many goats are there?

8) If a coin is flipped three times, what is the probability that one and only one of the tosses will land on heads?

9) Solve for x :

$$3(x - 2) = 5x - 12$$

10) Solve.

$$\frac{4 \times 10^{-6}}{8 \times 10^{-10}} =$$

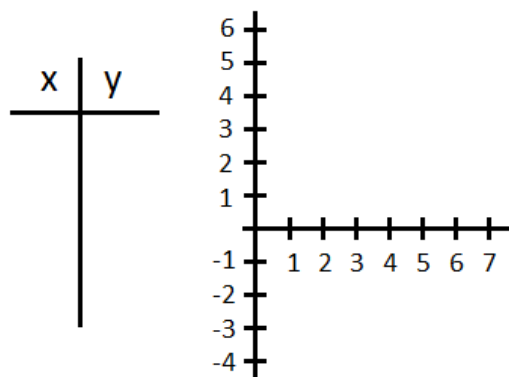
Name: _____

1) Fill in the missing comparison symbol.

$$-0.1 \bigcirc -90$$

2) If I give each child 9 grapes, there will be 8 left over. If I give each kid 6 grapes, there will be 50 left over. How many kids and how many grapes are there?

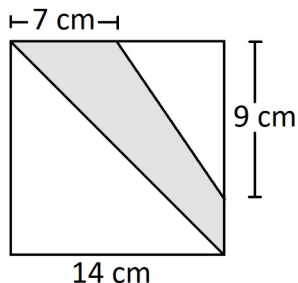
3) Graph the equation $3x + y = 5$.



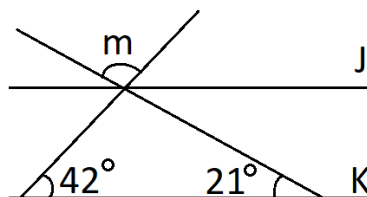
4) Multiply the fractions.

$$\frac{48}{35} \times \frac{14}{20} =$$

5) Find the area of the shaded part of the square.



6) $J \parallel K$. What is the measure of angle m ?



7) The ratio of cows to horses was 3:4. If there were 189 cows and horses in all, how many horses were there?

8) If a coin is flipped 3 times, what is the probability that the first toss will be heads and the last two will be tails?

9) Use the formula $A = \frac{1}{2}bh$ to find b when $A = 25$ and $h = 12.5$.

10) Solve.

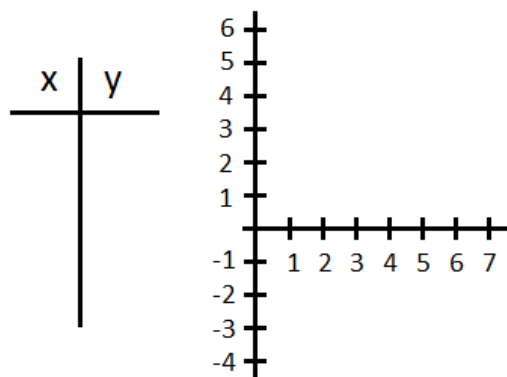
$$4^3 \cdot 4^8 \div 4^9 =$$

Name: _____

1) Write the prime factorization of **420**.

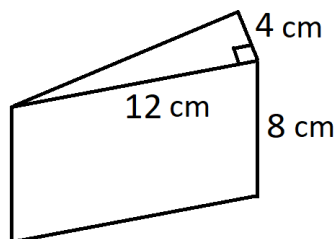
2) A bowl of cherries is 695 grams when it is half full of cherries and 1130 g when it is seven eighths full. How much does the bowl weigh?

3) Graph the equation $6x - 3y = 9$.

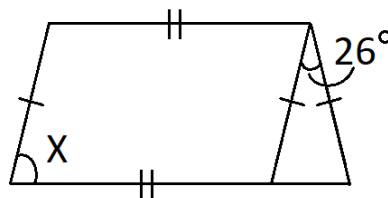


4) A pen is filled with pigs and chickens. Three sevenths of the 49 animals were pigs. How many were chickens?

5) Find the volume of this prism.



6) Find $m\angle X$.



7) The ratio of adults to children at a party is 3:5. If there were 60 more children than adults, how many kids were at the party?

8) A bag contains 2 yellow buttons and 2 blue buttons. If 2 buttons are drawn at the same time, what is the probability that they are both blue?

9) Rearrange the equation $d=vt$ to solve for v in terms of d and t .

10) Solve.

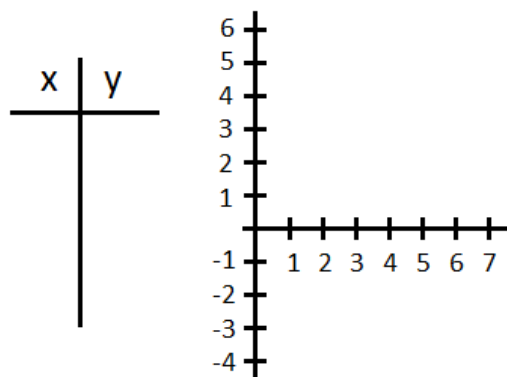
$$\left(3\frac{1}{4}\right)^2 =$$

Name: _____

1) Twenty seven million is how much less than 1 billion? Use words to write the answer.

2) A hamburger and two milk shakes costs \$18.48. Four hamburgers and four shakes costs \$53.96. How much does each hamburger cost?

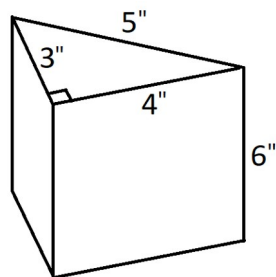
3) Graph the equation $x + 2y = 4$.



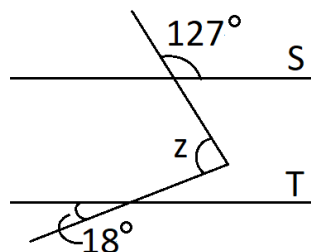
4) Write the reciprocal as a mixed number.

$$\frac{5}{7}$$

5) Find the surface area of this prism.



6) Find the measure of $\angle z$ given $S \parallel T$.



7) The ratio of blue to red beads was 4 to 3. The ratio of red to yellow beads was 5 to 7. If there were 60 blue beads, how many yellow ones were there?

8) A bag contains a black bead, a white bead, and a green bead. If the bead is replaced each time, what is the probability of drawing a green bead two times in a row?

9) Solve the equation for x in terms of the other variables.

$$\frac{ab + c}{x} = -d$$

10) Solve.

$$\left(\frac{2}{3}\right)^3 \times \left(\frac{1}{4}\right)^2 =$$

Name: _____

1) What is the least common multiple of 4, 7, and 8?

2) The sum of A and B is 37. The product of A and B is 132. What is the difference between A and B?

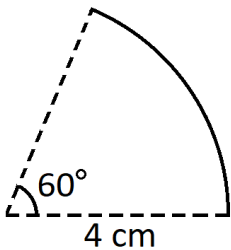
3) Complete the table.

	Group A	Group B	Total
kids	347	554	
adults	235		
total		1103	

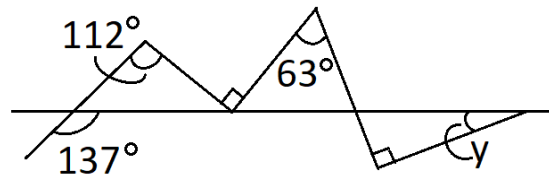
4) Write the reciprocal.

$$3\frac{1}{4}$$

5) What is the length of this arc?
(Express answer in terms of π .)



6) Find $m\angle y$.

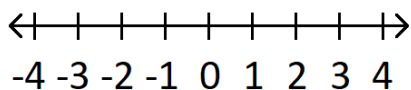


7) My brother and I got paid \$660 for a job. Since he did more work, we split the money in the ratio 7:4. How much money did I get?

8) A bag contains a black bead, a white bead and a green bead. If the bead is replaced each time, what is the probability of first choosing a black bead, then a white bead?

9) Solve and graph on a number line.

$$3x - 6 \geq -9$$



10) Solve.

$$\left(5\frac{3}{8}\right)^2 \div \left(\frac{1}{4}\right)^2 =$$

Name: _____

1) Multiply and write the answer in scientific notation.

$$(3.6 \times 10^{-2})(4.9 \times 10^8)$$

2) I am biking on a 6 mile mountain trail. If I bike at a speed of 9 mph going up and 15 mph going down, how many minutes does the trip take?

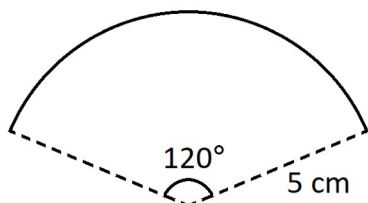
3) Complete the table.

Fraction	Decimal	Percent
$\frac{1}{4}$		
	0.8	

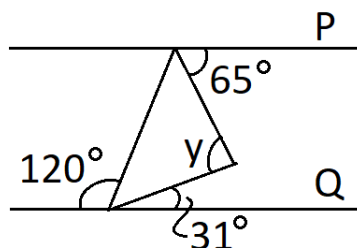
4) Divide the fractions.

$$\frac{27}{8} \div \frac{9}{2} =$$

5) What is the area of this sector? Use 3.14 for π .



6) Find the $m\angle y$ given that $P \parallel Q$.

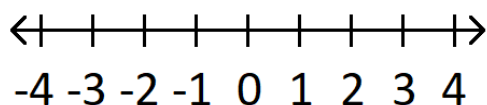


7) I spent \$48.15 on a meal including 7% sales tax. What was the cost of the meal without tax?

8) A bag contains a black bead, a white bead, and a green bead. The bead is replaced after each draw. If I draw twice, what is the probability that one draw will be black and one will be white, regardless of order?

9) Draw the inequality.

$$-1 < x \leq 3$$



10) Solve.

$$45^3 \div 27^3 =$$

Name: _____

1) Arrange from greatest to least.

$$-3, 3^2, \sqrt{3}, -3^3$$

2) I left my house and drove at 55 mph for 302.5 miles. If I aimed to get to my destination at 10:15 pm, what time should I leave my house?

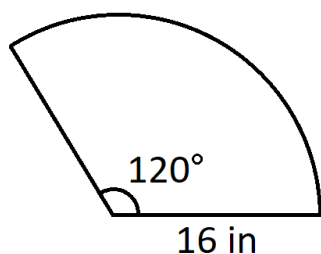
3) Complete the table.

Fraction	Decimal	Percent
	0.71	
		250%

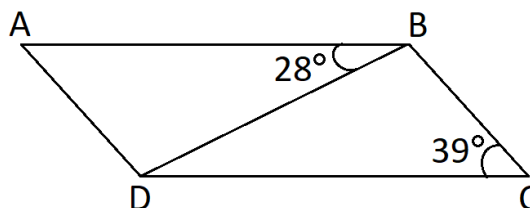
4) Divide.

$$\frac{81}{7} \div 9 =$$

5) What is the perimeter of this sector?
Use 3.14 for π .



6) ABCD is a parallelogram. What is the measure of $\angle ADB$.

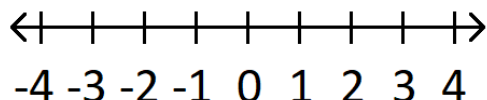


7) I donated 75% of my money to charity then spent 60% of what was left on a trip. Now I have \$1,000. How much money did I have to start?

8) A bag contains 2 white buttons and 2 red buttons. If 2 buttons are drawn at the same time, what is the probability that one is red and one is white?

9) Solve and graph on a number line.

$$14(x-1) < 7x$$



10) Solve.

$$\left(3\frac{4}{7}\right)^2 \times \frac{3}{5^3} =$$

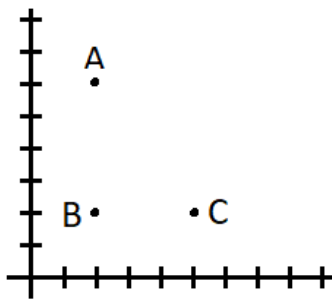
Name: _____

1) Which of these numbers is irrational?

$$\sqrt{7} \quad 7 \quad 7^2$$

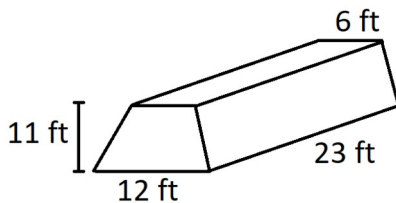
2) I have 226 apples which I divide into bags of 5 and bags of 8. The number of bags containing 5 apples is twice the number of bags containing 8 plus 2 more. How many bags contain 8 apples?

3) In this triangle, which segment is perpendicular to BC?

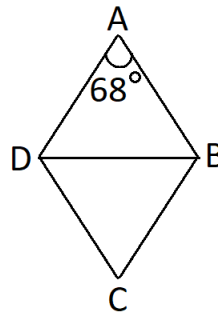


4) I had a piece of fabric 30 feet long. I gave one sixth of it to my sister. One fifth of what was remaining I used to make a blanket. I stained one fifth of the remaining piece. How much usable fabric do I have left?

5) What is the volume of this shape with a constant cross section?



6) ABCD is a rhombus. Find $m\angle DBC$.



7) There are 300 g of a 6% salt solution. Water is added to dilute the solution to 4% salt. How many grams of water were added?

8) A bag contains 2 black and 2 green buttons. What is the probability that first a green button is drawn and not replaced, then a black bead is drawn?

9) Solve the system of equations.

$$\begin{array}{ll} 3x + 7y = 15 & x = \\ 9x - 7y = 21 & y = \end{array}$$

10) Solve.

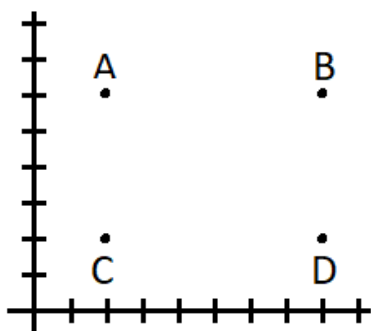
$$9 - [48 \div (3 + 3^2 + 24 \div 2)] =$$

Name: _____

1) What is the absolute value of -27?

2) I have \$91.50 and my brother has \$18.50. How much money should I give him so I will have 3 times as much money as he has?

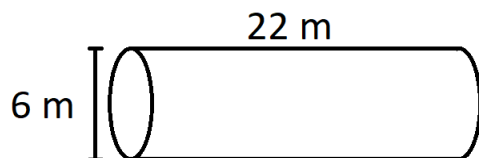
3) In this rectangle, which segment is parallel to AC?



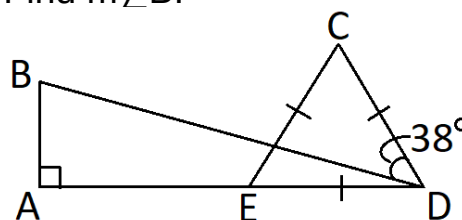
4) Divide and simplify.

$$\frac{6}{7} \div \frac{30}{21}$$

5) What is the volume of this cylinder?
Use 3.14 for π .



6) Find $m\angle B$.



7) I bought a phone with a regular price of \$280 for a 25% discount. I then resold it for 25% more than I paid. How much did I resell it for?

8) A bag contains a blue bead, a red bead, and a yellow bead. If the bead is replaced each time, what is the probability of drawing 3 times and never getting a blue bead?

9) Solve the system of equations.

$$-2x + 17y = 81 \quad x =$$

$$-4x + 18y = 50 \quad y =$$

10) Solve.

$$\frac{(-4) - (-4) - \sqrt{4 \cdot 4}}{4^2 - 4} =$$

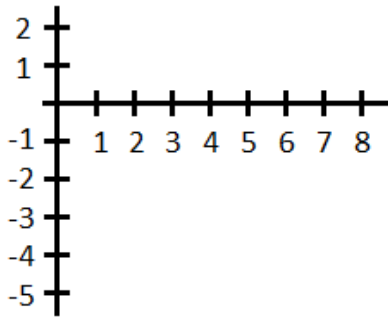
Name: _____

1) Solve.

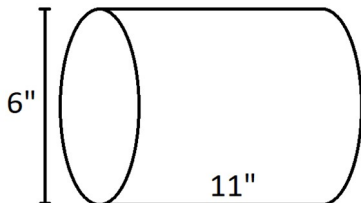
$$|-103|$$

2) An adult ticket to a play costs \$17 while a child's ticket costs \$12. One hundred twelve people attended the play and the total admission paid was \$1,579. How many children saw the play?

3) The coordinates of 3 vertices of a rectangle are (3,-4), (8,-4), and (8,1). What are the coordinates of the fourth vertex?



5) What is the surface area of this shape. Express the answer in terms of π .



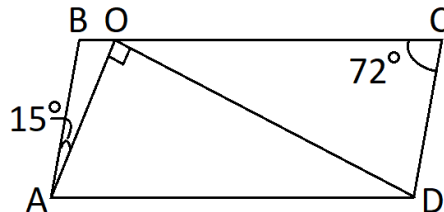
7) The ratio of my money to my sister's money was 8:3. I spent \$6 and now the ratio of my money to my sister's money is 2:1. How much money does my sister have?

9) Write an algebraic expression and solve: Three times the quantity x plus eighteen equals 120.

4) Multiply and simplify.

$$\frac{3}{7} \times \frac{21}{15} \times 1\frac{5}{3} =$$

6) ABCD is a parallelogram. What is the measure of $\angle ODC$.



8) A bag contains a blue bead, a red bead, and a yellow bead. The bead is replaced after each draw. If three draws are made, what is the probability that at least one of the draws is blue?

10) Solve.

$$\frac{3 + 3^2 \cdot 3 - 3^3 \div 3}{\sqrt{3^3 \div 3}} =$$

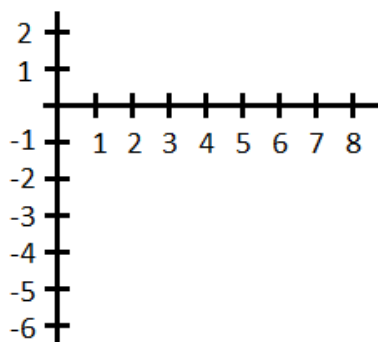
Name: _____

1) Arrange the following numbers in ascending order.

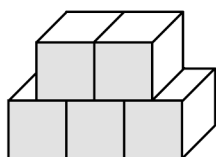
$$\frac{24}{5}, 5.2, 0.9, \frac{11}{24}$$

2) I have 3 times as many nickels as pennies and twice as many pennies as quarters. If in total I have \$5.13, how many pennies do I have?

3) The coordinates of a triangle are (3,-6), (3,2), and (7,-6). What is the area of the triangle?



5) Five similar cubes are stacked as shown. If the shaded area equals 500 cm², what is the volume of each cube?

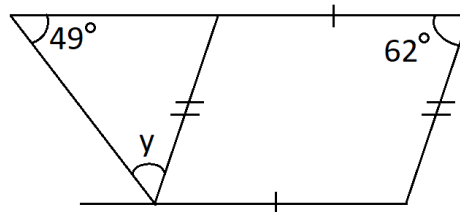


7) I have 500 blue and red beads altogether at a ratio of 3 blue for every 7 red. If I give away 50 blue and 150 red, what is the new ratio of blue to red beads?

9) Write an algebraic equation and solve: Five less than what number cubed is twenty two?

4) I spent one third of my allowance on a hot dog. Then I bought a book for three fifths of what was left. Now I have \$4.80. How much was my allowance?

6) Find $m\angle y$.



8) A bag contains 2 purple and 2 yellow beads. If the bead is replaced after each draw, what is the probability of choosing purple 3 times in a row?

10) Solve.

$$\frac{(10 - 5)^{(7 - 5)}}{3^3 \cdot 2^{(9 - 7)}} =$$

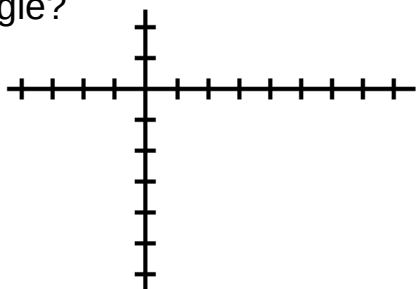
Name: _____

- 1) What is the cube root of 27?

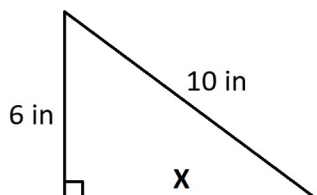
$$\sqrt[3]{27}$$

- 2) I biked to the waterfall at 12 km/hr and I biked back at 18 km/hr. Altogether the trip took 2.5 hours. How far away was the waterfall?

- 3) The coordinates of 3 vertices of a rectangle are (-3,-6), (-3,1), and (7,1). What is the area of the rectangle?



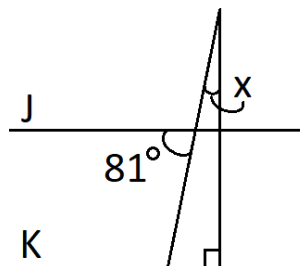
- 5) Find the length of **X** using the Pythagorean Theorem.



- 4) Solve.

$$\left(-\frac{2}{5}\right)^3$$

- 6) $J \parallel K$. Find $m\angle x$.



- 7) The ratio of goats to horses on a farm is 1:3. The ratio of horses to chickens is 6:11. If there are 513 animals in total, how many more chickens than goats are there?

- 8) What is the probability that I will flip a coin 3 times and it will be tails all three times?

- 9) Write an algebraic equation and solve: Two sevenths of what number is thirty two?

- 10) Solve.

$$\left[\left(3.25 - \frac{5}{8}\right) \div \frac{7}{4}\right]^{(8-6)} =$$

Name: _____

1) Solve.

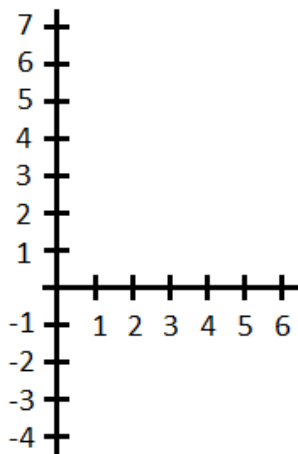
$$\sqrt[3]{64}$$

2) I completed three sevenths of my trip in 1.5 hours traveling at 30 mph. I completed the remainder of the trip in 1 hour. What was my average speed for the whole trip?

3) Draw the equations and find the intersection:

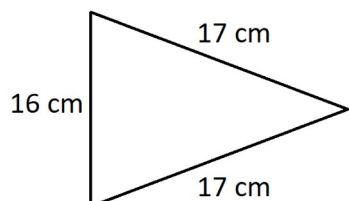
$$y = -x + 5$$

$$y = 2x - 1$$

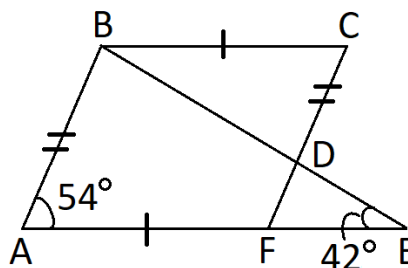


4) How many seven ninths are in 3?

5) Calculate the total area using the Pythagorean Theorem.



6) Find $m\angle CDE$.



7) The ratio of my money to my brother's money is 7:2. The ratio of my money to my friend's money is 3:5. If my friend has \$87 more than my brother, how much money do I have?

8) If a coin is flipped 3 times, what is the probability that the result will be the same all 3 times?

9) Write an algebraic equation and solve: Twenty eight is four ninths of what number?

10) Solve.

$$3 \div \left[\left(\frac{3}{7} \right)^2 \div \frac{9}{7} \right] \div \frac{1}{5} =$$

Name: _____

- 1) What sign is a negative number multiplied by a positive number?
- 2) Ava, Ben, and Carmen collected shells. Ava and Ben together have 65 shells. Ben and Carmen together have 74 shells. Ava and Carmen together have 103 shells. How many shells do all three children have altogether?

- 3) Find the intersection of the two equations:

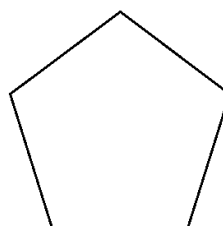
$$y = \frac{1}{2}x - 7$$

$$y = -2x + 3$$

- 4) Three eighths of the beads in a jar were red. One third of them were blue. If there are 5 more red beads than blue beads in the jar, how many beads are there in total?

- 5) A triangle has sides with lengths 37 m, 42 m, and 56 m. Determine whether or not they form a right triangle.

- 6) Find the sum of the interior angles of a pentagon.



- 7) The ratio of cookies to cakes in the pet shop is 9:2. After someone buys 48 cookies, there are 29 more cookies than cakes in the shop. How many cakes are there?

- 8) If a die is rolled 3 times, what is the probability that a number less than 5 will be rolled all 3 times?

- 9) Solve using the substitution method.

$$8x - 4y = -12 \quad x =$$

$$-7x + 9y = 60 \quad y =$$

- 10) Solve.

$$\left[\left(3.9 + 2\frac{2}{5} \right) \div \frac{7}{5} - 2^2 \right]^3 =$$

Name: _____

1) Use the numbers 3 and 7 to illustrate the commutative property of multiplication.

2) Albert, Bob, and Carl sold \$3 raffle tickets. Al sold $\frac{4}{9}$ of the tickets. Bob sold $\frac{1}{4}$ as many as Carl. If Bob sold 42 fewer tickets than Al, how much money did they collect altogether?

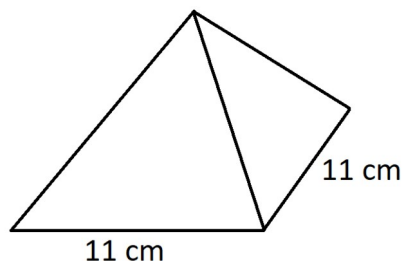
3) Find the intersection of the two equations:

$$3x - y = 2$$

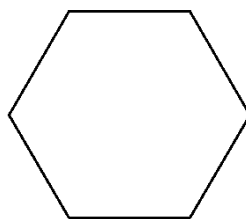
$$2x + 2y = 12$$

4) I made some cookies and sold four sevenths of them. Then I gave away 54 and now I have 27 left. How many did I make?

5) What is the volume of this square pyramid with a height of 12 cm.



6) Find the sum of the exterior angles of a hexagon.



7) The ratio of green to yellow beads was 11:6. After losing 62 green beads, now the ratio of yellow to green beads is 4:5. How many beads were there initially?

8) A bag contains 2 red beads and 3 green beads. What is the probability of pulling out 2 beads and having them both be red?

9) Solve using the substitution method.

$$\begin{array}{rcl} x + 6y & = & -50 \quad x = \\ -3x + 2y & = & -30 \quad y = \end{array}$$

10) Solve.

$$\left[\left(1.7 - 2\frac{3}{5} \right) \cdot \frac{1}{3} \div \frac{1}{10} \right]^2 \div 3^3 =$$

Name: _____

1) Use the numbers 1, 4, and 5 to illustrate the associative property of addition.

2) I left my house at a constant speed of 70 m/min. After 6 minutes, my brother left on his bike at 210 m/min. How long does it take him to catch up to me?

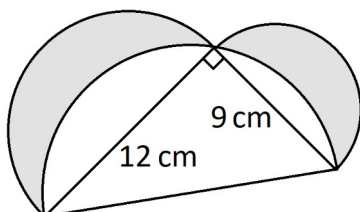
3) Find the intersection of the two equations:

$$2x - y = 10$$

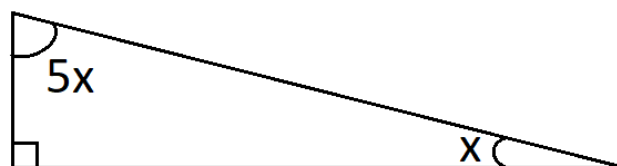
$$x - 2y = -4$$

4) One seventh of my marbles equals one third of my friend's marbles. If I give my friend 26 marbles, we would have the same amount. How many do we have together?

5) This figure is made up of 3 overlapping semicircles. What is the area of the shaded part?



6) Find $m\angle x$.



7) A farm had 300 horses and cows combined. The number of horses decreased by 5%. The number of cows increased by 7%. The total number of animals increased by 3%. How many horses are in the field now?

8) A bag contains 3 red beads, 2 blue beads, and 5 yellow beads. What is the probability of pulling out 2 beads and having them be the same color?

9) Solve the system of equations.

$$x + y + z = 0 \quad x =$$

$$3x - 5y + z = -4 \quad y =$$

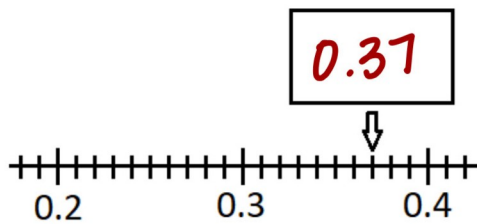
$$-6x + 2y + 3z = 13 \quad z =$$

10) Solve.

$$\left(\frac{\frac{4}{9}}{\frac{2}{3}} \right)^2 - \frac{1 - \frac{1}{6}}{3} =$$

Name: _____

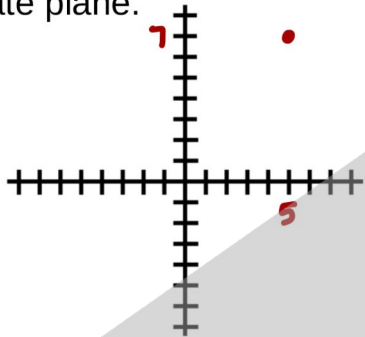
- 1) Fill in the missing number.



- 2) Great Grandpa turned 93 in 2020. In what year was he born?

$$\begin{array}{r} 19 \\ 2020 \\ - 93 \\ \hline 1927 \end{array}$$

- 3) Plot point (5,7) on the coordinate plane.

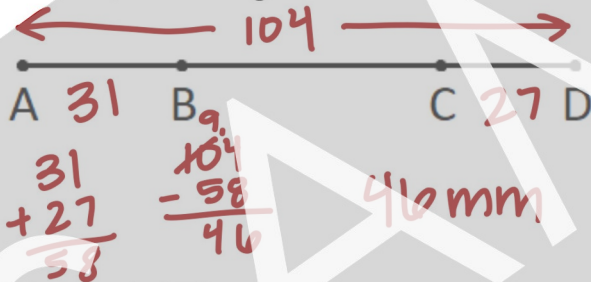


- 4) What fraction of the rectangle is shaded?



$$\frac{5}{12}$$

- 5) AB is 31 mm. CD is 27 mm. If AD is 104 mm, how long is BC?



- 6) What do you call two angles that add to 180 degrees?

SUPPLEMENTARY ANGLES

- 7) Write 0.072 as a percent.

$$0.072 \times 100 = 7.2\%$$

- 8) What is the mean of the following list of numbers:

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- 9) If $x = 5$ and $y = 9$, then what does xy equal?

$$5 \times 9 = 45$$

- 10)

$$\begin{array}{r} - 0.00 \\ 74.34 \end{array}$$

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About the Author

Hi, I'm Michelle! I have a master's degree and PhD in engineering from Stanford University and a bachelor's degree from Caltech. I also have a master's in Education and a single subject credential in Physics. I am an engineer and computer scientist by trade, but currently I am homeschooling my 4 kids in elementary through high school while working for a California homeschool charter. In my spare time, I enjoy reading, hiking, and photography.



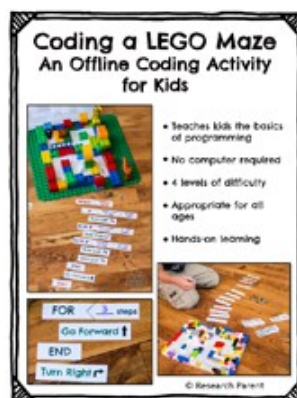
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