MONTHLY MATH CHALLENGE
Homework
April
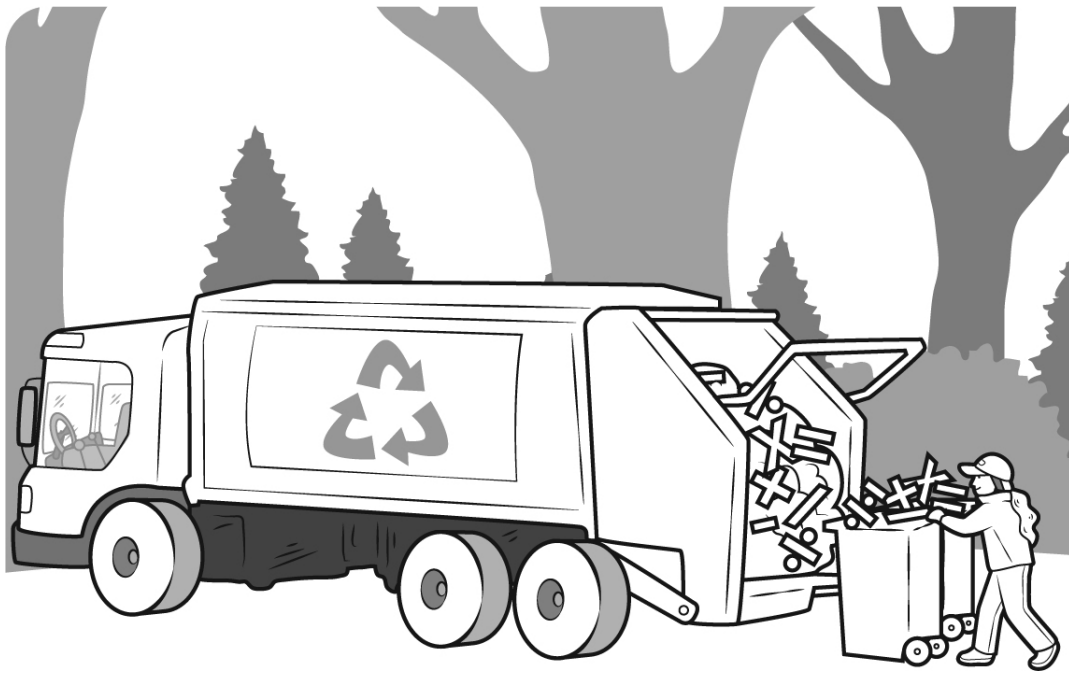
My Name: _____

Do all of these, but skip 2 pages:

- ☐ page 1
- ☐ page 2
- ☐ page 3
- ☐ page 4
- ☐ page 5
- ☐ page 6
- ☐ page 7
- ☐ page 8
- ☐ page 9
- ☐ page 10
- ☐ page 11
- ☐ page 12
- ☐ page 13
- ☐ page 14
- ☐ page 15
- ☐ page 16
- ☐ page 17
- ☐ page 18
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- ☐ page 20
- ☐ page 21
- ☐ page 22
- ☐ page 23
- ☐ page 24
- ☐ page 25
- ☐ page 26
- ☐ page 27

Hand in by April 30.

Feel free to hand in early!

Name: _____

Get a fidget spinner! Spin it.   I needed to spin _____ time(s) to finish.

The letter V has an unknown value. If you multiply V by six, the product is two. What value does V have?	$473 \div 10$	Each side of a regular pentagon is 20.7 centimeters. What is the perimeter?
A circle graph has four sections. Only three sections are labeled. The labels are 20%, 20%, and 22%. What should the missing section be?	7, 7, 21, 17, 35, _____, 49, 37, 63, 47, 77, 57, 91, 67	Convert $30\frac{9}{10}$ to an improper fraction.
2, 2, 8, 8, 2, 2, 8, 8, 2, 2, 8, _____, 2, 2, 8, 8, 2	40, _____, 60, 70, 80, 90, 100	Rewrite $\frac{2}{5}$ as a decimal.
$0.16 \cdot 6 =$	$\|-15\| + h = 18$ h =	y = x + 14 y = 21 What is the value of x?

Name: _____

The cafeteria workers used 53 heads of lettuce to make salads for the students at Ames Middle School. There are 6 heads of lettuce in each case. Write an equation and solve it to find out how many cases of lettuce were used. Write your answer as a mixed number.

Nathan was in trouble. He had used all of his father's masking tape to put his baseball bat back together. Now his father needed the tape and, to make it worse, his bat was falling apart again! His father told Nathan since he had used a third of his tape, he could pay a third of the cost of a new roll. If the new roll of tape costs $1.65, how much will Nathan have to pay?

Ms. Floop challenged her class thusly: "Give me any decimal number and I'll quickly give you a number back to multiply it by and you will always get 1 as a result." Sure enough, she could do it in a matter of seconds. How?

At Bongo Beach the waves were coming in at a rate of 44 waves per hour. How many waves were coming in per minute? Round your answer to the nearest hundredth.

To get some change to have available for the family garage sale, Maria went to the bank and exchanged $30.25 for quarters. How many quarters did she get?

$11t - 18.4 = 58.6$

$t =$

$5 + 7 \times 6 + 4$

What is the remainder of 40 divided by 7?

Math Workbook

Name: _____

April did 37 $\frac{2}{3}$% of the remodeling work on the house, and Jenna did 20 $\frac{3}{4}$% of the work. What percent of the total work did they do?

If you added together the total number of sides of 3 octagons, 2 quadrilaterals, an isosceles triangle, and an equilateral triangle, how many sides would there be?

Mrs. Jackson planted her poinsettias in a circular planter after Christmas last year. The radius of the planter is 8 in. What is the circumference of the planter? Round your answer to the nearest hundredth.

April spent $26 buying 5 old radios at the flea market. She paid $4.30 for one radio and $4.30 each for two more radios. If the other two radios cost the same, how much did she spend on each of them?

A rectangular playground at Bigtown Middle School has a perimeter of 361 meters, and one of the sides is 120 meters long. What is the area of the playground?

Joe's nursery just received a shipment of 4.6 tons of oak firewood. He sells it in 40-lb lots. How many lots can he make from 4.6 tons?

$\frac{10}{11} \div \frac{19}{44} =$

0.002 x 0.8

t - 6 + t = 40
What is the value of t?

Math Workbook

Name: _____

Sierra has a total of twenty-seven pennies and dimes. She has thirteen more dimes than pennies. How much money does she have?

Robert has ten fewer dimes than quarters. Robert has a total of thirty-two dimes and quarters. How many of each coin does he have?

Steven has four times as many quarters as nickels. If Steven had forty-four more nickels and thirteen fewer quarters, he would have the same number of each coin. How many of each coin does he have?

Andrew has pennies, nickels, and quarters. He has a total of $19.80. There are two times as many pennies as nickels. There are five times as many quarters as nickels. How many of each coin does he have?

Name: _____

Brianna has a total of thirty-one quarters and nickels. She has eleven more nickels than quarters. At the mall, Brianna spent ten quarters and five nickels. How much money does she have left?

Matthew's pennies total $1.83 less than his nickels. His dimes total $1.65 more than his nickels. The total value of the coins is $5.67. How many of each coin does he have?

Daniel has seven fewer nickels than pennies. Daniel has a total of $1.21. How many of each coin does he have?

Jessica has a total of $26.22. She has five times more nickels than pennies, twenty-one more dimes than pennies, and fifty-five fewer pennies than quarters. How many of each coin does she have?

Name: _____

Robot was given a math problem to solve.
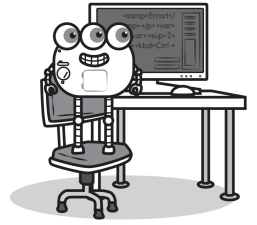
Miss Smith's class wrote about responsibility on Blame Someone Else Day. Each student wrote two pages. There are twenty students in Miss Smith's class. How many pages in all did the students write?

Robot wrote this program in Python to solve it.

```
pages_per_student = 2
number_of_students = 20
total_pages_written = pages_per_student * number_of_students
print(total_pages_written)
```

Robot's program will print the answer to the math problem.
What will the program print out?

Hints and Questions
To multiply in Python * is used.

In the program, "pages_per_student" is called a variable.
It is used to store a value. Name two other variables used in the program.

After Robot's program is done, the variable pages_per_student will have a value in it. What value does it have?

Name: _____

Robot was given a math problem to solve.

Each sled team has 16 dogs. An adult husky weighs about 56 pounds. A complete sled team weighs about how many pounds?
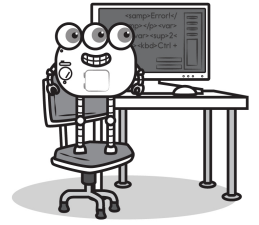
Robot wrote this program in Python to solve it.

```
# Number of dogs in each sled team
num_dogs_per_team = 16

# Weight of each husky dog in pounds
weight_per_dog = 56

# Total weight of a sled team
total_weight = num_dogs_per_team * weight_per_dog

print("The total weight of the sled team is", total_weight, "pounds.")
```

Robot's program will print the answer to the math problem.
What will the program print out? Fill in the blanks.

The total weight of the sled team is ____ ____ ____ pounds.

Hints and a Question
To multiply in Python * is used.

When Robot wants to help explain something in the program, Robot starts a line with # and a space. This is called a comment. How many comments are in Robot's program?

Name: _____

Robot wrote this program to solve a math problem.
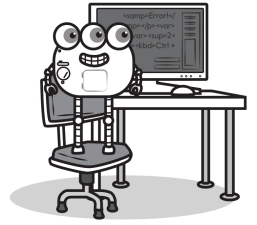
```
# Variables for the price of the umbrella and the sales tax
umbrella_price = 25.18
sales_tax_percentage = 6

# Calculate the sales tax
sales_tax = (sales_tax_percentage / 100) * umbrella_price

# Calculate the total price
total_price = umbrella_price + sales_tax

# Print out the result
print("Mr. Young paid $" + str(round(total_price, 2)) + " for his umbrella
including sales tax.")
```

What will the program print out? Fill in the blanks.

Mr. Young paid $____ ____ . ____ ____ for his umbrella including sales tax.

Wait! Robot forgot to write down the math problem.
Can you write your own word problem to explain Robot's computer code?

Name: _____

How could the number $21.74 appear in a real-life situation?

A new book tells the story of Emily who travels back in time to the year 68 B.C. She meets a girl named Amanda who is thirteen years old. In what year was Amanda born?

How many years did Emily travel back in time?
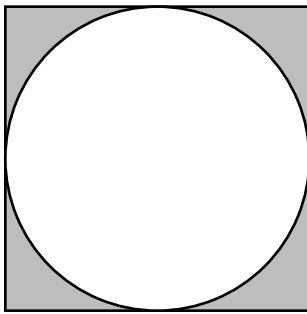
The radius of this circle is equal to the radius of this square. If the radius of this circle is 16 centimeters, what is the area of the shaded part?

April is sketching a picture of a tree in front of the school. She is guessing the tree is about 36 feet tall. She draws a box on her 8.5 by 11.5-inch piece of paper. The box is 6.6 inches wide by 10.8 inches high. From the top of this box, she moves down about 1 inches and draws the top of the tree. The tree is then drawn to the bottom of her box. At the bottom of her page, what would be a good scale to write?

Real Height of Tree = _____ feet

Height of Tree Drawn =_____ inches

Circle the best scale.

1 inch = 4.1 feet
1 inch = 3.7 feet
1 inch = 2.1 feet
1 inch = 4.4 feet

Name: _____

Three whole numbers are each greater than 4 and less than 11. If you add the three numbers together, their sum is 20. One of the numbers is 8. What are possible values for the other 2 numbers?

The students chosen for the class play were posted. All of the students in the play are in Mrs. Harris' class and were born in months with exactly 31 days. For each student, write whether they are in the play, might be in the play, or are not in the play.

Connor is in Mrs. Harris' class and was born on March 1.

Gavin is in Mr. Clark's class and was born on May 7.

Maria is in Mrs. Harris' class and was born on June 2.

Mary is in Mrs. Harris' class and was born on November 9.

Robert is in Mrs. Harris' class and was born on January 29.

Six players in a basketball game scored points. The players averaged 8 points each. Here are their scores.

_____, _____, 8, 10, 6, 5

Can you fill in the blanks with any possible numbers that would work?

Anne wants to ride her bike to Rosa's house. Rosa lives 8 miles from Anne's house. Anne leaves her house at 1 p.m. and arrives at Rosa's house in a little bit. She checked her bike app, which says she averaged a speed of 14.2 miles per hour. What time did she arrive at her friend's house?

Name: _____

You have a pie. The pie is divided into six equal pieces. Each piece is nine cubic cm in volume. Your brother eats one piece. Each of the remaining pieces is divided in half again. Is the remaining volume of pie greater, less than, or equal to three-fifths of the original volume?

Coach Jones stresses the importance of free throws during basketball practice. The day before each game, everyone on the team shoots 20 free throws, and he charts their progress as the season goes by. If Connor made 5 out of 20 on the first day of practice, and most recently he made 10 out of 20, by what percent has his free throw completion rate changed? Round your answer to the nearest hundredth of a percent.

About how many times can a piece of wire that is sixteen centimeters long be wrapped around a wooden dowel that is a third of a centimeter in diameter? Round your answer to the nearest whole number.

There were 14,079 weddings in Springs City last year. According to state records, notaries public performed 14% of the weddings. How many weddings were not performed by notaries public?

Name: _____

Anne measured the pH in a flask of acidic solution several times. She was slowly adding more acid, trying to reach a stable pH of 5.5. Every time she would add a few drops of acid, the pH would drop. A few minutes after she added drops of acid, the pH would start to rise. So she kept this up and finally read the pH seven times over a period of five minutes without adding more acid. The seven pH measurements were 5.36, 5.46, 5.38, 5.47, 5.42, 5.37, and 5.4. What is the range of her measurements?

A pony in a pony ride takes 43 seconds to make one circuit around a circle. The circumference of the circle is 86 m. What is the average speed of the pony in meters per second?

Fifteen people have signed up for the bowling tournament at Snookie's Bowling Alley and Arcade. This is about $\frac{3}{4}$ of the maximum number of people allowed in the tournament. How many more can still sign up?

How many one foot square tiles are needed to cover a kitchen floor if the kitchen is ten feet long and thirteen feet wide?

Name: _____

The denominator of a fraction is four more than two times the numerator. The sum of the denominator and numerator is ninety-four. What is the fraction?

Kyle has 1 liter of 77% acid. How much water should he add to make a solution that is 7% acid?

The EdHelper football team played a game against the Math Wizards. They played two halves, each of which lasted twenty-four minutes. The EdHelper team's time of possession was ten minutes less than the Math Wizard's. How long was the Math Wizard's time of possession?

The product of two consecutive integers is six thousand, six. What are the integers?

Megan is 8 and five-sixth years older than Alexandra. The sum of their ages is 39 and one-sixth years. How old is Alexandra?

Two-fourths of a number equals 40. What is the number?

Name: _____

Samantha has 1 liter of a mixture containing 45% of boric acid. How much water must be added to make the mixture 9% boric acid?

The Party Bank pays nine percent simple interest per year on deposits. (Assume the interest is paid at the end of the year and is not added to the balance.) Nathan was paid $180 of interest over a two year period. How much did he originally deposit?

The sum of Grace's age and Katherine's age is 30 years. Katherine is seven years older than Grace. How old is Katherine?

The measures of two angles in a complementary triangle are in the ratio of 2:3. What is the measure of the smaller angle?

Connor originally bought six hundred shares of two years ago. The company has since had a 2 for 1 stock split. Connor's entire investment in has increased in value by 40%. He originally paid $7,200 for the stock. What is the current per share price of ?

Cody and Emily drove separately to a park that is 24 kilometers away. Cody left at 9:41 a.m. and arrived at 10:29 a.m. Emily left at 8:36 a.m. and arrived at 8:51 a.m. Emily drove her car at a rate that averaged 66 kph faster than Cody. What were Cody's and Emily's speeds?

Name: _____

Erin lives at the point (-2, 3). She wants to go to the closest mall. There are two malls on the map. Mall AA is at (-16, 6), and Mall BB is at (-4, 14). On the map she can only travel vertically or horizontally, one unit at a time. She cannot go diagonally. So she could go from (1,3) to (1,4) or (1,3) to (2,3), but not from (1,3) to (2,4). Which mall is closer to her?

Emily and Anne have a secret way of sending numbers to each other. Emily drew a y-axis on the left of the paper and an x-axis on the bottom. Emily plotted these points and wrote B (for the bottom number). Anne then found the secret coordinate. Draw a small grid to see if you can figure out the secret coordinate.

The points are (24, 14), (11, 22), (19, 16), and (6, 15).

Name: _____

Nine times a number is $33\dfrac{3}{4}$. What is the number?

---

885 exceeds nine times a number by 93. What is the number?

Eleven more than 7 times a number is 60. What is the number?

Seventeen exceeds one-tenth of a number by 10. What is the number?

If a number is increased by 35, the result is 65. What is the number?

If nine is added sixteen times to a number, the result is 146. What is the number?

Name: _____

Twelve times a number, decreased by sixty-five, equals forty-three. What is the number?	Three-fourths of a number equals 972. What is the number?	A number plus 29 is eighty-six. What is the number?
Eleven less than two-thirds of a number equals 5. What is the number?	Four-fifths of a number equals 192. What is the number?	The sum of forty-two and twenty-seven is forty-four more than a number. What is the number?

Name: _____

---

(5) (-6) =

(-5) (7) =

(10) (-9) =

Use >, <, or = to complete.

-1.20 ___ 1.2

-8.5 ___ -8.2

-6.7 ___ 6.76

Use >, <, or = to complete.

-8.7 ___ -8.3

3 ___ -1

4.2 ___ -4.20

Simplify.

| -2 | _____

-| 3 | _____

| $\frac{1}{4}$ | _____

Write the reciprocal of
each number.

-6 _____

12 _____

$\frac{8}{11}$ _____

---

26 - (-5) =

-23 - (6) =

-(25) - (-12) =

(-8.6) - (2.7) - (-1.5) =

Use >, <, or = to complete.

-4.76 ___ -4.7

-9 ___ -1

-7.30 ___ 7.3

(-11.5) (-7.1) =

(11.5) (-4.4) =

(-4.1) (5.5) =

(-8.4) (-8.6) =

Use >, <, or = to complete.

-7 ___ -3

7.80 ___ -7.8

-5.2 ___ -5.24

(-9) (10) =

(-10) (-6) =

(-7) (6) =

Math Workbook

Name: _____

Use >, <, or = to complete.

-3.7 ___ -3.78

-2.7 ___ 2.5

-7 ___ 4

(7.3) - (-1.9) - (-3.7) =

---

22 - (-9) =

-24 - (3) =

-(-27) - (4) =

(-10) (9) =

(-4) (-5) =

(4) (-10) =

-(22) - (-12) =

-16 - (6) =

-25 - (3) =

Use >, <, or = to complete.

-3.7 ___ -3.70

-1.2 ___ -1.3

-9 ___ -7

Write these numbers in order from least to greatest:

$\frac{2}{4}$, $3\frac{1}{6}$, 3, $\frac{-1}{4}$, 0

Simplify.

-($\frac{3}{4}$) _____

-(-5) _____

-(4) _____

Use >, <, or = to complete.

-1.5 ___ 1.6

6.35 ___ -6.3

-6.3 ___ -6.30

(-6.1) (-5.9) =

(-9.9) (-8.2) =

(-10.1) - (1.8) - (3.7) =

Use >, <, or = to complete.

-6 ___ -9

-8.30 ___ 8.3

-6.8 ___ 6.2

Name: _____

The difference between two numbers is 680. The average of these same two numbers is 619. What are the two numbers?

Rosa is always running out of batteries, so she's going to stock up. At the store, the best deal she could find was a pack of 20 batteries for $11. She has $45. How many packs can she buy? She cannot break a pack into parts or the owner will not be happy!

Emily has 180 US dollars, but she wants to exchange her money for Euros. The bank has a sign that says 1 US dollar = 1.03 Euros. If she exchanges her US dollars into Euros, how many Euros will she get?

Emma just sold a car she had bought 2 years ago. She sold it for 35% less than the original price she paid. The difference between the sale price and the price she paid is $2,065. How much did she originally pay for the car?

Name: _____

Draw 3 pictures in the correct order. Use each of the clues so you will know what to draw.
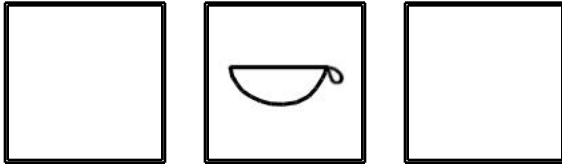
Draw 1 of these 3 pictures.
The picture IS in the correct spot.

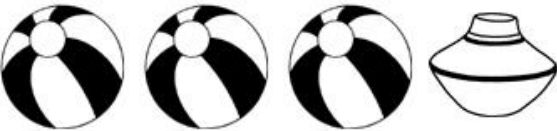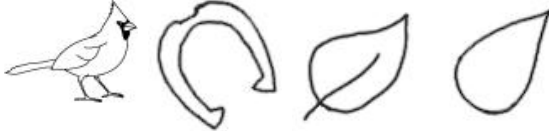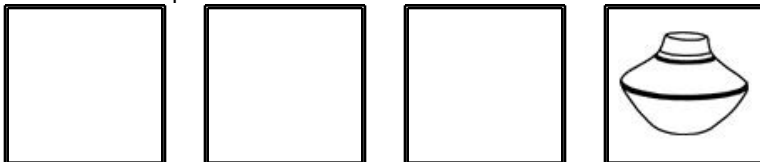Draw 1 of these 3 pictures.
The picture IS in the correct spot.

Draw 1 of these 3 pictures.
The picture IS in the correct spot.

Draw 2 of these 3 pictures.
The pictures to use are in the correct spot.

Draw the 3 pictures in the correct order:

Draw 4 pictures in the correct order. Use each of the clues so you will know what to draw.

Draw 1 of these 4 pictures.
The picture IS in the correct spot.

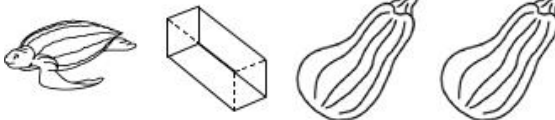Draw 1 of these 4 pictures.
The picture is NOT in the correct spot.

Draw 1 of these 4 pictures.
The picture IS in the correct spot.

Draw 1 of these 4 pictures.
The picture IS in the correct spot.

Draw 2 of these 4 pictures.
The pictures to use are in the correct spot.

Draw the 4 pictures in the correct order:

Math Workbook

Name: _____

	+	**x**	**=**
?	B	C	42
B	A	A	16
B	B	B	56
	7	3	1

(column operators left side: +, -, =)

Equations and Hints:

Each letter is a whole number.

Fill in the equations using the chart:

$B + A - B = 3$ $B + A \times A = \underline{\ }$ $\underline{\ } + \underline{\ } \times \underline{\ } = 56$

$\underline{\ } + \underline{\ } - \underline{\ } = 1$

Additional hints:

$A < 11$ $B = A + 4$

Show Work:

Solve:

$? = \underline{\ }$

Name: _____

Fill in the missing numbers. How? The sum of the four surrounding numbers is in the center of each square.

Exactly one of the four numbers has to be one of these numbers: $\frac{3}{4}$, $1\frac{2}{5}$, or $4\frac{1}{2}$.

The other three numbers have to all be DIFFERENT and must be from these: $9\frac{1}{2}$, $5\frac{1}{4}$, $2\frac{1}{2}$, or $6\frac{1}{2}$.

	$6\frac{1}{2}$		$\frac{3}{4}$		$1\frac{2}{5}$		$5\frac{1}{4}$
$\frac{3}{4}$	**15**	$2\frac{1}{2}$	**18**	$5\frac{1}{4}$	$18\frac{13}{20}$	$2\frac{1}{2}$	$15\frac{13}{20}$	$6\frac{1}{2}$
	$5\frac{1}{4}$		$9\frac{1}{2}$		$9\frac{1}{2}$		$1\frac{2}{5}$
$6\frac{1}{2}$	$15\frac{13}{20}$	$2\frac{1}{2}$	$21\frac{3}{4}$	$5\frac{1}{4}$	$21\frac{3}{4}$	$2\frac{1}{2}$	$19\frac{9}{10}$	$6\frac{1}{2}$
	$1\frac{2}{5}$		$4\frac{1}{2}$		$4\frac{1}{2}$		$9\frac{1}{2}$
$9\frac{1}{2}$	$18\frac{13}{20}$	$5\frac{1}{4}$	$18\frac{3}{4}$	$2\frac{1}{2}$	$18\frac{3}{4}$	$6\frac{1}{2}$	$22\frac{13}{20}$	$5\frac{1}{4}$
	$2\frac{1}{2}$		$6\frac{1}{2}$		$5\frac{1}{4}$		$1\frac{2}{5}$
$4\frac{1}{2}$	$21\frac{3}{4}$	$9\frac{1}{2}$	$19\frac{1}{4}$	$\frac{3}{4}$	**18**	$9\frac{1}{2}$	[ ]	$6\frac{1}{2}$
	$5\frac{1}{4}$		$2\frac{1}{2}$		$2\frac{1}{2}$		$5\frac{1}{4}$
$9\frac{1}{2}$	$25\frac{3}{4}$	$6\frac{1}{2}$	$19\frac{9}{10}$	$9\frac{1}{2}$	[ ]	$4\frac{1}{2}$	[ ]	$6\frac{1}{2}$
	$4\frac{1}{2}$		$1\frac{2}{5}$		$6\frac{1}{2}$		$2\frac{1}{2}$

Name: _____

Get a fidget spinner! Spin it.   I needed to spin _____ time(s) to finish.

Rewrite $\frac{24}{25}$ as a decimal.

24, 30, 36, 42, 48, 54,

_____, 66, 72, 78

Circle the percentage that is closest to 27 out of 52:

98%

69%

32%

15%

$\frac{3}{4} \div \frac{7}{12} =$

---

5 x 5 x 5 x 5 x 5 = x^5

What is the value of x?

In what quadrant would you find the point (12, 4)?

13.3285 x 10^3 =

---

18 - t + 15 = 18
What is the value of t?

0.3 (0.5 (0.3 + 9)) =

(11,718,750) ,   (2,343,750) ,

(468,750) ,   (93,750) ,

(18,750) ,   (3,750) ,   (750) ,

_____,   (30)

---

y = x + 12
y = 22
What is the value of x?

Simplify.

$\frac{4,400}{11,000} =$

---

edHelper

Name: _____

$$+ \qquad - \qquad =$$

A	B	?	0
B	B	C	10
C	B	B	12

x
+
=

$$23 \qquad 132 \qquad 155$$

Equations and Hints:

Each letter is a whole number.

Fill in the equations using the chart:

C + B - B = 12   B x __ + B = 132   __ + __ - __ = 10

__ x __ + __ = 23

Additional hints:

B = A + 10   C < 21

Show Work:

Solve:

? = __

Math Workbook

Name: _____

Sydney has a total of two hundred twenty-four coins. She has four times as many nickels as pennies and one-half as many pennies as quarters. How much money does she have?

Jessica's nickels and quarters total $17.20. If the nickels were replaced by pennies then she would have $16.23. How many of each coin does she have?

Daniel took a certain number of pennies from Brandon. He then gave Brandon the same number of dimes in return. Daniel had $1.35 more than he had before the exchange. What was the number of dimes that Daniel gave Brandon?

Makayla has four times as many pennies as nickels and six times as many quarters as nickels. Makayla has a total of one hundred ten pennies, nickels, and quarters. The total value of the coins is $15.90. How many of each coin does she have?

Eric has seven fewer nickels than quarters. Eric has a total of forty-three nickels and quarters. How much money does he have?

The value of a mix of Cameron's quarters and dimes is $7.10. If the dimes were replaced by pennies, the value would be $5.66. How many of each coin does he have?

Name: _____

Eric ran the 100-m dash in 16.22 seconds. Gavin ran it .48 seconds faster. What was Gavin's time?

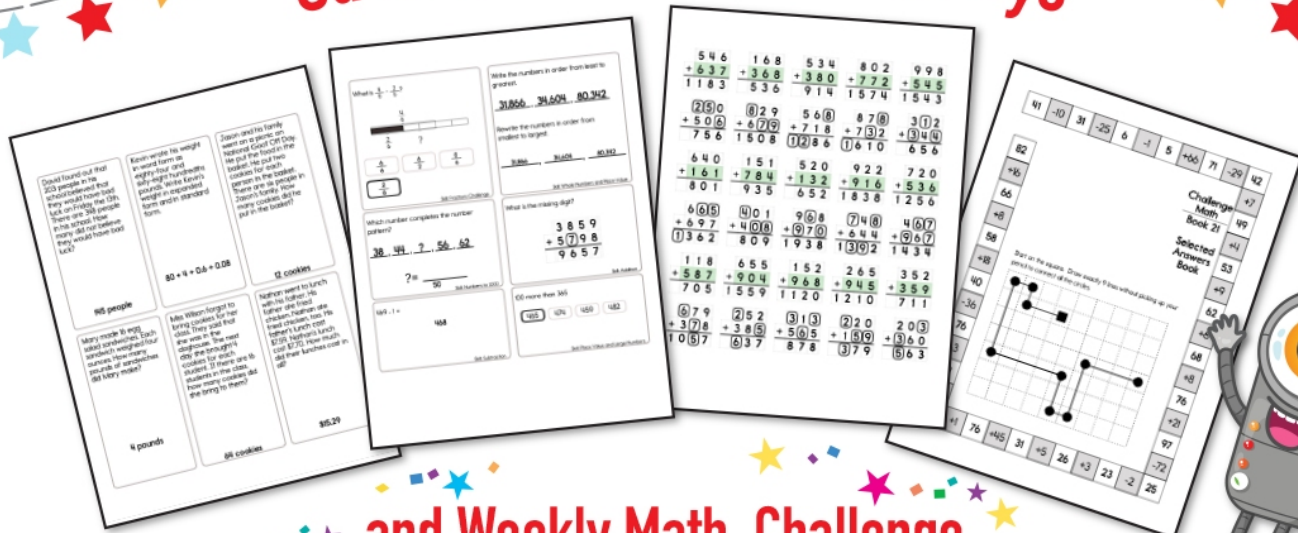What are the two common values of Pi used in calculations involving circles?

The massive engine climbed 61 hills last month. The not-so-massive engine climbed .78 times as many hills. How many hills did the not-so-massive engine climb?

The Great Ralconi performs approximately 11 magic shows per month for half the work-year and does 14 shows a month for the other half. He takes two months of vacation per year. About how many shows a year does he do?

Hunter had 14 CDs. Nathan had 31 CDs. Maria had half as many as Hunter, and Wendy had as many as Hunter and Maria put together. How many did they have in all?

Rose purchased 8 widgets for $20.51 at Widgeemart. As it turns out, she also bought some whoozits, and 15 whoozits cost the same as 8 widgets. What is the cost of one whoozit?