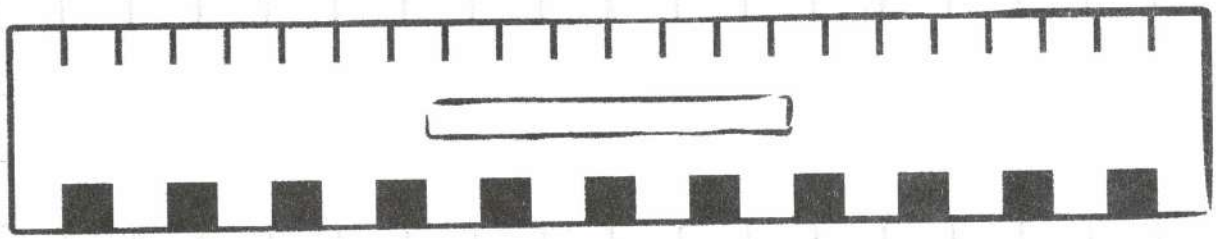
7th Grade

MATHEMATICS

Work from Home

PRACTICE



Name:_____

Puzzle #1

#1  +  +  = 12

#2  +  = 16

#3  -  = 2

 =  =  =

Puzzle #2

#1  +  +  = 44

#2  +  = 40

#3  +  +  = 39

 =  =  =

Puzzle #3

#1  +  +  = 46

#2  +  = 38

#3  -  = 6

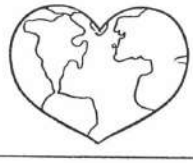
 =  =  =

Puzzle #4

#1  +  +  = 

#2  ×  = 

#3  +  = 48

 =  =  =

Puzzle #5

#1  ×  = 48

#2  +  = 14

#3  -  = 4

 =  =  =

Puzzle #6

#1  ×  ×  = 8

#2  +  +  = 27

#3  ×  = 10

 =  =  =

Puzzle #7

#1  ×  = 77

#2  ×  = 110

#3  ×  +  = 117

 =  =  =

Puzzle #8

#1  ÷  = 2

#2  ÷  +  = 44

#3  −  = 30

 =  =  =

Puzzle #9

#1  ÷  = 2

#2  ×  = 18

#3  ×  = 27

 =  =  =

Puzzle #10

#1  ÷  + 2 = 17

#2  ×  ×  = 27

#3  -  +  = 51

 =  =  =

Name:_____ Date:_____

Puzzle Recording Sheet

Puzzle #1

 =  =  =

Puzzle #2

 =  =  =

Puzzle #3

 =  =  =

Puzzle #4

 =  =  =

Puzzle #5

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Puzzle #6

 =  =  =

Puzzle #7

 =  =  =

Puzzle #8

 =  =  =

Puzzle #9

 =  =  =

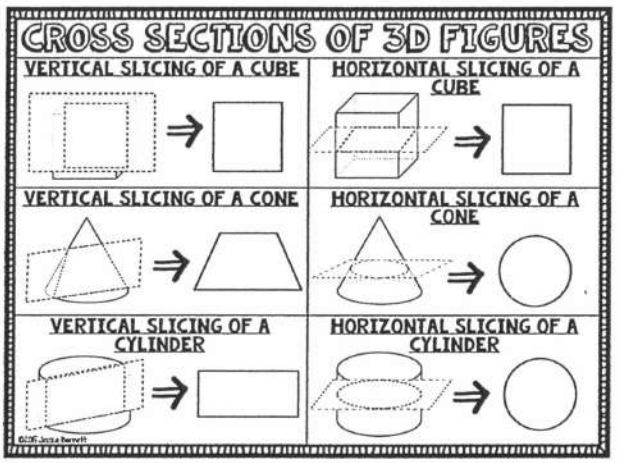
Puzzle #10

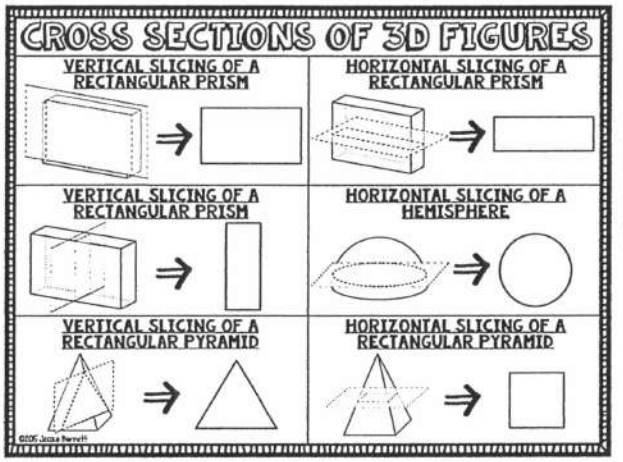
 =  =  =

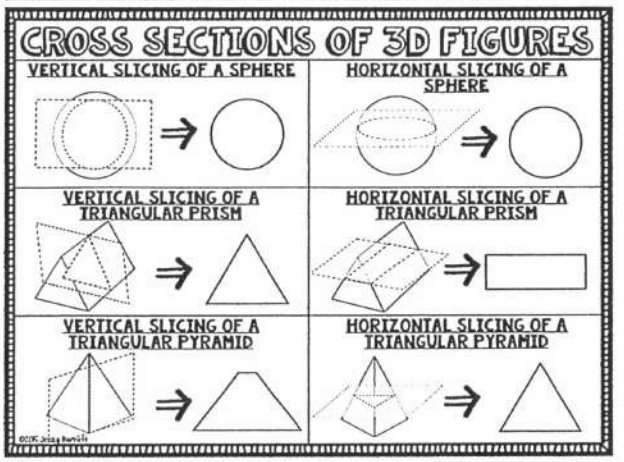
Name: _____ Date: _____

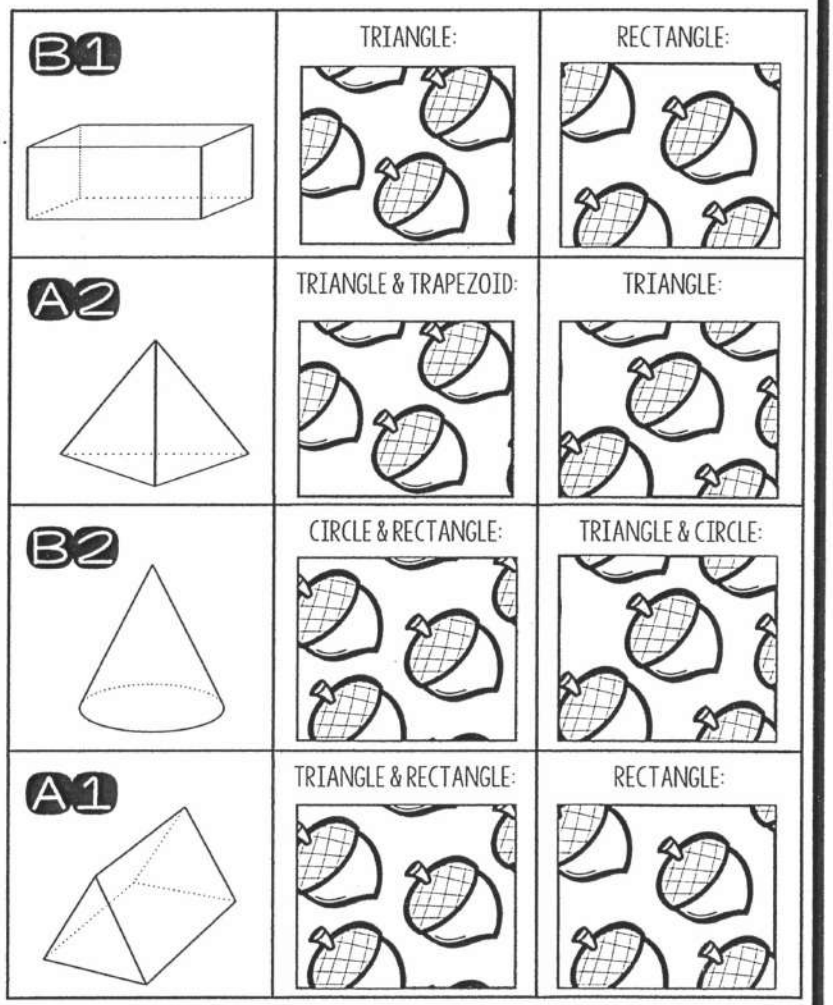
SLICING 3D FIGURES

DIRECTIONS: DETERMINE THE 2D SHAPES THAT CAN BE FORMED BY A VERTICAL OR A HORIZONTAL SLICE AND CIRCLE YOUR ANSWER. FIND THE CORRECT BOX IN THE GRID AT THE BOTTOM OF THE PAGE AND SKETCH THE IMAGE ASSIGNED TO THE SOLUTION.







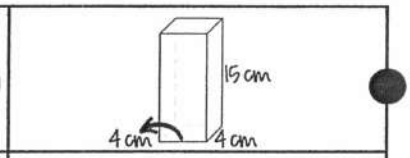


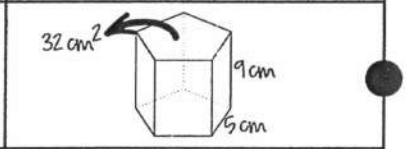
	A	B
1		
2		

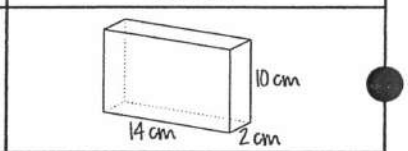
Name: _____ Date: _____

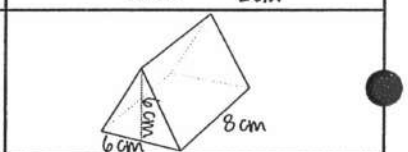
VOLUME OF PRISMS

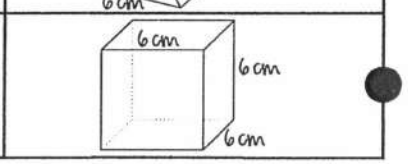
DIRECTIONS: DETERMINE THE VOLUME OF EACH PRISMS ON THE LEFT AND DRAW A STRAIGHT LINE TO THE ANSWER ON THE RIGHT. FIND THE PROBLEM NUMBER AT THE BOTTOM OF THE PAGE AND WRITE THE LETTER THE LINE CROSSES IN THE BLANK SPACE.

1. 

2. 

3. 

4. 

5. 

- 240 cm^3
- 168 cm^3
- 160 cm^3
- 144 cm^3
- 120 cm^3
- 216 cm^3
- 288 cm^3
- 72 cm^3
- 280 cm^3
- 298 cm^3

VOLUME OF A RECTANGULAR PRISM

FORMULA FOR THE VOLUME OF A RECTANGULAR PRISM:

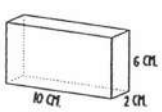
$V = l \cdot w \cdot h$

l = length
w = width
h = height

STEPS:

1. Identify each of the dimensions.
2. Substitute the dimensions into the given formula.
3. Solve using order of operations.

EXAMPLE 1: Determine the volume of the rectangular prism.



1) length=2 cm.
width=10 cm.
height=6 cm.

2) $V = 2 \cdot 10 \cdot 6$

3) $V = 120\ cm^3$

VOLUME OF A TRIANGULAR PRISM

FORMULA FOR THE VOLUME OF A TRIANGULAR PRISM:

$V = B \cdot h$

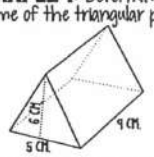
B = area of the triangular base
h = height

area of a triangle: $A = \frac{1}{2} \cdot b \cdot h$

STEPS:

1. Identify each of the dimensions. Determine the B if necessary.
2. Substitute the dimensions into the given formula.
3. Solve using order of operations.

EXAMPLE 1: Determine the volume of the triangular prism.



1) b of the triangle = 5 cm.
h of the triangle = 6 cm.
$B = \frac{1}{2} \cdot 5 \cdot 6 = 15\ cm^2$
h of the prism = 9 cm.

2) $V = 15 \cdot 9$

3) $V = 135\ cm^3$

THIS ANIMAL IS EASY TO LOVE. IT IS A PART OF THE EARTHS MOST ENDANGERED GROUP OF MAMMALS. THIS ANIMAL CAN BE AS SMALL AS 2.5 INCHES AND AS BIG AS 2.5 FEET, HEAD TO TOE. THE FEMALES OF THIS MAMMAL ARE MORE DOMINANT THAN THE MALES. THIS ANIMAL SINGS. THIS ANIMAL IS A...

_____ _____ _____ _____ _____

4 2 1 5 3

VOLUME OF OTHER PRISMS

FORMULA FOR THE VOLUME OF A PRISM:

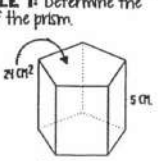
$V = B \cdot h$

B = area of the base
h = height

STEPS:

1. Identify each of the dimensions.
2. Substitute the dimensions into the given formula.
3. Solve using order of operations.

EXAMPLE 1: Determine the volume of the prism.



1) $B = 24\ cm^2$
$h = 5$ cm.

2) $V = 24 \cdot 5$

3) $V = 120\ cm^3$

Name: _____ Date: _____

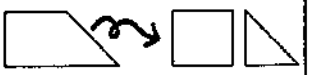
VOLUME OF A COMPOSITE FIGURE

DIRECTIONS: DETERMINE THE SOLUTION FOR EACH PROBLEM AND CIRCLE YOUR ANSWER. FIND THE PROBLEM NUMBER AT THE BOTTOM OF THE PAGE AND FILL IN THE BLANK WITH THE WORD(S) ASSIGNED TO THE SOLUTION.

VOLUME OF A COMPOSITE 3D FIGURE

WHAT IS A COMPOSITE FIGURE?

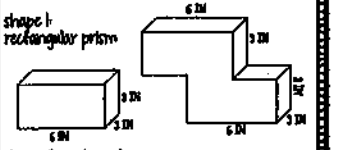
A composite figure is an irregular shape made up of regular shapes.



STEPS:

1. Identify each of the regular shapes that make up the composite figure.
2. Identify the dimensions of each regular shape.
3. Determine the volume of each regular figure.
4. Add the volumes together.

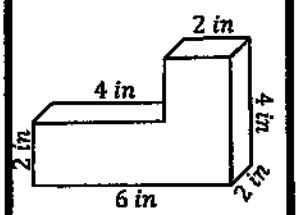
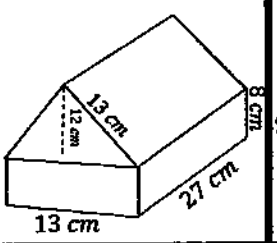
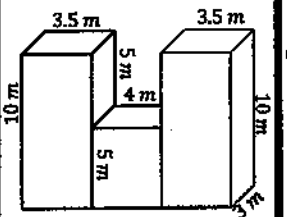
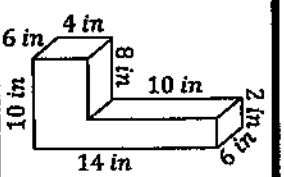
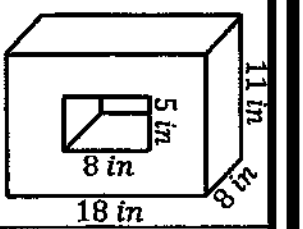
EXAMPLE 1: Determine the volume of the composite figure.



shape 1: $V = 6 \cdot 3 \cdot 3 = 54\ in^3$

shape 2: $V = 6 \cdot 3 \cdot 3 = 54\ in^3$

total volume = $54\ in^3 + 54\ in^3 = 108\ in^3$

1	2	3	4	5
				
$64\ IN^3$: 48TH	$4,914\ CM^3$: THE ALOHA STATE	$44\ M^3$: FRANKFORT	$240\ IN^3$: CARDINAL	$1,264\ IN^3$: YELLOW HIBISCUS
$20\ IN^3$: 49TH	$4,914\ CM^3$: THE SUNSHINE STATE	$105\ M^3$: TOPEKA	$360\ IN^3$: NENE	$1,584\ IN^3$: APPLE BLOSSOM
$32\ IN^3$: 50TH	$4,914\ CM^3$: THE GOLDEN STATE	$270\ M^3$: HONOLULU	$280\ IN^3$: PARROT	$792\ IN^3$: GOLDENROD

⟹ HAWAII IS THE _____ (1) STATE TO ENTER THE UNITED STATES.

⟹ THE STATE NICKNAME IS _____ (2)

⟹ THE STATE CAPITAL IS _____ (3)

⟹ THE STATE BIRD IS A _____ (4)

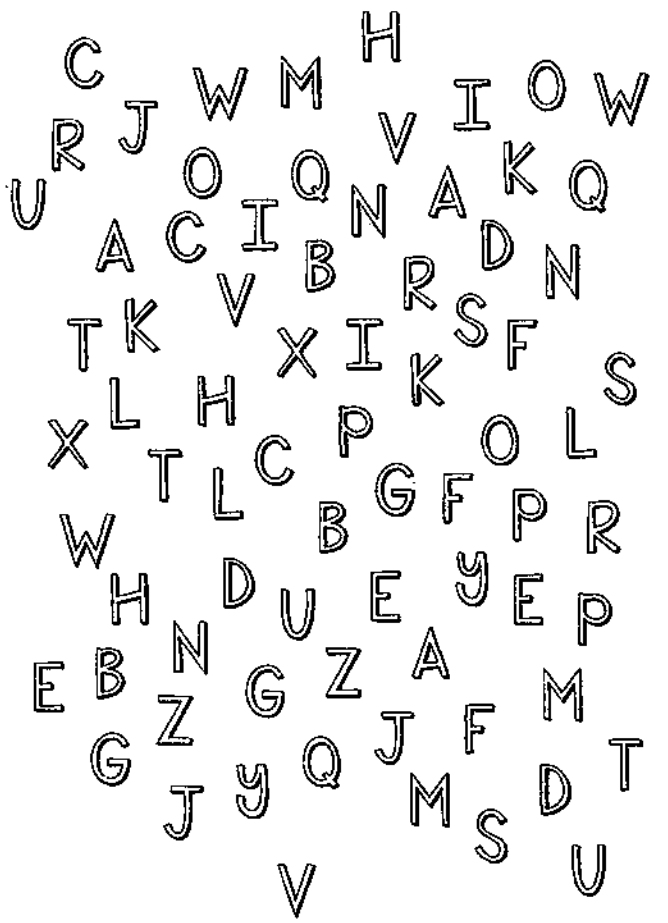
⟹ THE STATE FLOWER IS A _____ (5)

Name: _____ Date: _____

MEASURES OF CENTRAL TENDENCY

DIRECTIONS: DETERMINE THE SOLUTION OF EACH PROBLEM ON THE LEFT AND DRAW A STRAIGHT LINE TO THE ANSWER ON THE RIGHT. FIND THE PROBLEM NUMBER AND THE BOTTOM OF THE PAGE AND WRITE THE LETTER THE LINE CROSSES IN THE BLANK SPACE.

1	DETERMINE THE MEAN OF: 19, 22, 8, 38, 17
2	DETERMINE THE MEDIAN OF: 19, 22, 8, 38, 17
3	DETERMINE THE MODE OF: 19, 22, 8, 22, 17
4	DETERMINE THE MEAN OF: 54, 28, 71, 63, 10, 44
5	DETERMINE THE MEDIAN OF: 54, 28, 71, 63, 10, 44



19
44
17
45
8
54
26
22
49
20.8

THIS ANIMAL HAS THE LARGEST EYES OF ANY MAMMAL ON LAND. THIS ANIMALS TEETH TAKE UP MORE SPACE THAN THEIR BRAIN. THIS ANIMAL CAN SLEEP LAYING DOWN OR STANDING UP. THIS ANIMAL IS UNABLE TO VOMIT. THIS ANIMAL PRODUCES 10 GALLONS OF SALIVA A DAY. THIS ANIMAL IS A...

_____ _____ _____ _____ _____

4 2 1 5 3

MEASURES OF CENTRAL TENDENCY

WHAT ARE MEASURES OF CENTRAL TENDENCY?

Measures of central tendency include mean, median and mode.

You may be asked questions about all measures of central tendency. Below is an example of a question and to the right is the example solved.

EXAMPLE:

1. Paul scores a 71, 92, 87, 54, and 71 on his math tests this year. If Paul scores a 94 on his 6th test, which measure of central tendency changes the most?

SOLUTION:

Mean based on 5 test scores:
$\frac{(71+92+87+54+71)}{5} = 77$

Mean based on 6 test scores:
$\frac{(71+92+87+54+71+94)}{6} = 78.16$

Median based on 5 test scores:
54, 71, 71, 87, 92 ⟹ 71

Median based on 6 test scores:
54, 71, 71, 87, 92, 94 ⟹ 79

Mode based on 5 test scores:
54, 71, 71, 87, 92 ⟹ 71

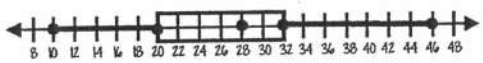
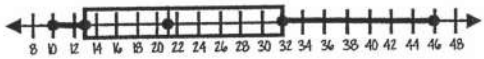
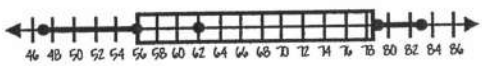
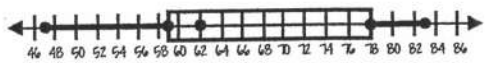
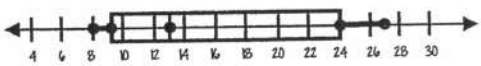
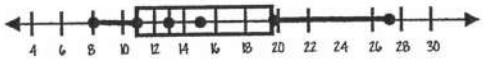
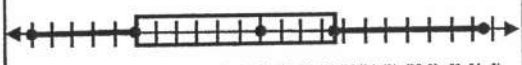
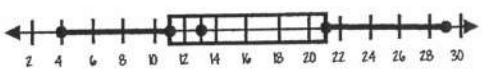
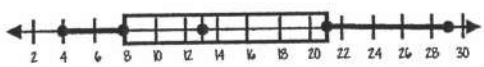
Mode based on 6 test scores:
54, 71, 71, 87, 92, 94 ⟹ 71

The value of the median changes the most.

Name: _____ Date: _____

BOX AND WHISKER PLOT

DIRECTIONS: DETERMINE THE CORRECT BOX AND WHISKER PLOT OF EACH SET OF NUMBERS AND CIRCLE YOUR ANSWER. FIND THE PROBLEM NUMBER ON THE MYSTERY PICTURE AND SHADE IN THE ENCLOSED REGIONS WITH THE COLOR ASSIGNED TO YOUR ANSWER.

1	32, 46, 28, 13, 10, 19, 21	 YELLOW	 BLACK
2	56, 83, 79, 62, 47, 78, 59	 RED	 BLACK
3	13, 9, 18, 24, 27, 8, 11, 15	 YELLOW	 RED
4	82, 99, 101, 87, 72, 115, 94	 RED	
5	12, 18, 24, 14, 29, 6, 10, 4	 YELLOW	 BLACK

BOX PLOTS

WHAT ARE BOX PLOTS?

A box plot, also known as a box and whisker plot, is a number line using measures of variation to display the data distribution.

The labeled parts of a box plot include a lower and upper extreme, first and third quartiles, and a median. Outliers may also be plotted.

In a box plot, 50% of the data is plotted within the box and 25% extends out from each side.

STEPS:

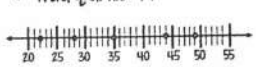
1. List the data from least to greatest.
2. Identify
   - ✓ any outliers
   - ✓ lower extreme (smallest number excluding outliers)
   - ✓ upper extreme (greatest number excluding outliers)
   - ✓ median
   - ✓ first & third quartiles
3. Create a number line and plot the values found in step 2.
4. Draw a box around the area between the first and third quartiles.
5. Draw lines extending from the box to both extremes and the median to the box.

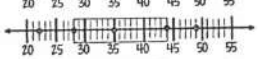
EXAMPLE 1: Create a box plot of the numbers:

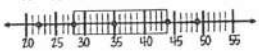
27, 46, 36, 22, 49, 31, 35, 29, 42

1) 22, 27, 29, 31, 35, 36, 42, 46, 49

2)
- ✓ There are no outliers
- ✓ lower extreme: 22
- ✓ upper extreme: 49
- ✓ median: 35
- ✓ first quartile: 28
- ✓ third quartile: 44

3) 

4) 

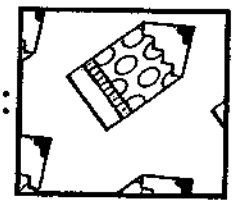
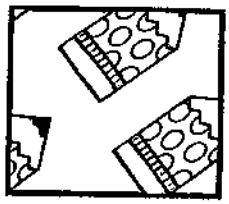
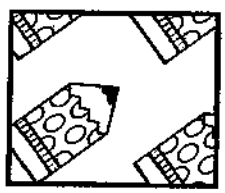
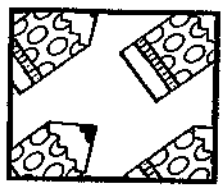
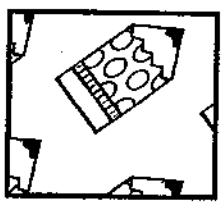
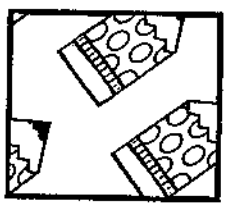
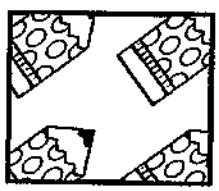
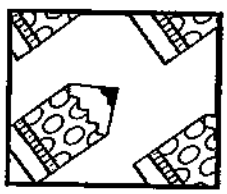
5) 

3	3	3	5/3	5	3	3	5	5/3	3	3	3
3	3	3	3	5	5	3	3	3	3		
3	3	3	5	5	5	5	3	3	3		
3	3	2	2	2	4	4	4	3	3		
3	4	2	1	2	4	1	4	4	3		
3	4	2	2	2	4	2	2	2	3		
3	4	1	4	4	4	2	1	2	3		
3	3	2	2	2	4	2	2	3	3		
3	3	2	1	2	4	1	4	3	3		
3	3	3	2	2	4	4	3	3	3		

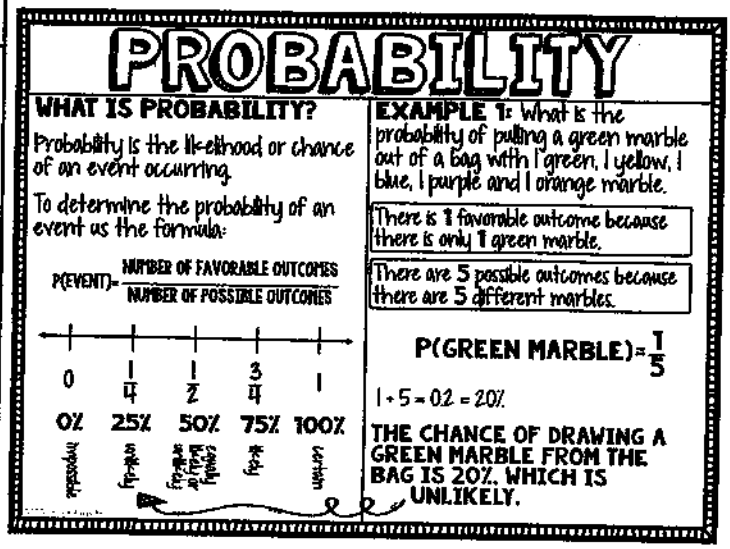
Name: _____ Date: _____

PROBABILITY

DIRECTIONS: DETERMINE THE PROBABILITY FOR EACH PROBLEM AND CIRCLE YOUR ANSWER. ROUND TO THE NEAREST WHOLE PERCENT. FIND THE CORRECT BOX IN THE GRID AT THE BOTTOM OF THE PAGE AND SKETCH THE IMAGE ASSIGNED TO THE SOLUTION.

B1 IF SHANNA ROLLS A STANDARD SIX SIDED DICE, WHAT IS THE PROBABILITY SHE WILL ROLL A NUMBER GREATER THAN THREE?	50%: 	67%: 
A2 SAM CHOOSES A CARD FROM A STANDARD DECK OF CARDS. (THIS INCLUDES ACE, 2, 3, 4, 5, 6, 7, 8, 9, 10, JACK, QUEEN, AND KING IN 4 DIFFERENT SUITS. A TOTAL OF 52 CARDS) WHAT IS THE PROBABILITY OF SAM CHOOSING A JACK, QUEEN, KING OR ACE?	31%: 	8%: 
B2 IF GARRET CHOOSES A MARBLE FROM A BAG THAT INCLUDES THREE GREEN, TWO PURPLE, FOUR BLUE, AND SIX YELLOW MARBLES. WHAT IS THE PROBABILITY OF HIM CHOOSING GREEN?	30%: 	20%: 
A1 IF BARRET WRITES THE NUMBERS 1 - 10 ON PIECES OF PAPER AND PLACES THEM IN A HAT, WHAT IS THE PROBABILITY OF BARRET CHOOSING A NUMBER LESS THAN FIVE?	40%: 	50%: 

	A	B
1		
2		

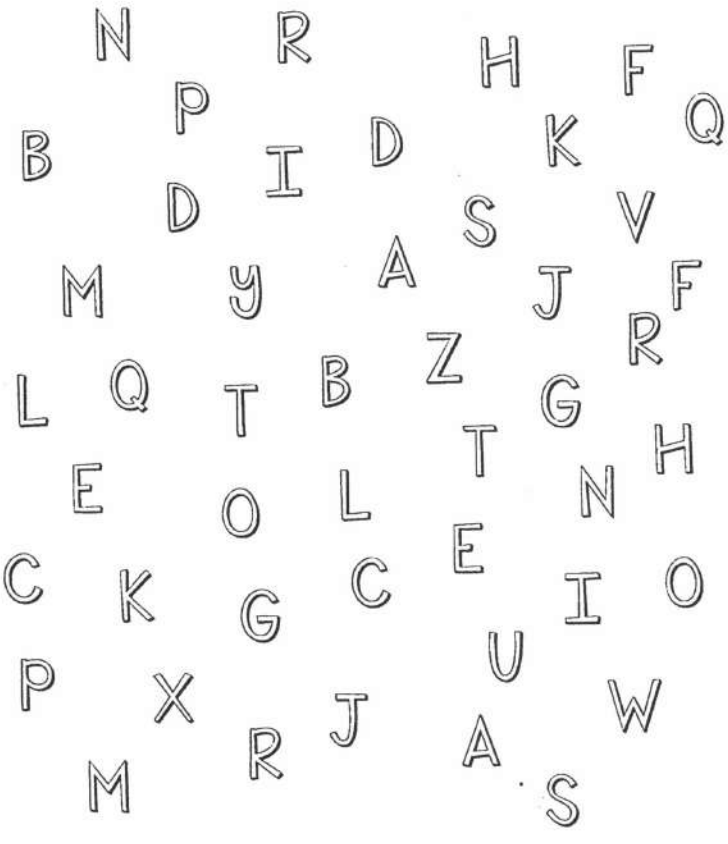


Name: _____ Date: _____

PROPORTIONS

DIRECTIONS: DETERMINE THE VALUE OF X FOR EACH PROBLEM ON THE LEFT AND DRAW A STRAIGHT LINE TO THE ANSWER ON THE RIGHT. FIND THE PROBLEM NUMBER AT THE BOTTOM OF THE PAGE AND WRITE THE LETTER THE LINE CROSSES IN THE BLANK SPACE.

1	$\frac{X}{10}=\frac{12}{15}$
2	$\frac{2}{X}=\frac{24}{30}$
3	$\frac{28}{50}=\frac{7}{X}$
4	$\frac{X}{3.2}=\frac{5}{4}$
5	$\frac{8.5}{X}=\frac{15}{30}$



	2.5
	13.5
	17
	2.56
	4.25
	8
	3.92
	1.6
	4
	12.5

THIS ANIMAL IS THE LARGEST ANIMAL ON EARTH. IT IS BELIEVED THAT SOME SPECIES CAN LIVE OVER 200 YEARS. THIS ANIMAL IS REQUIRED TO BREATHE AIR REGULARLY. THIS ANIMALS EYES ARE SMALL COMPARED TO ITS OVERALL SIZE. THIS ANIMAL COMMUNICATES TO OTHERS WITHIN ITS SPECIES THROUGH "SONG". THIS ANIMAL IS A...

_____ _____ _____ _____ _____

4 2 1 5 3

PROPORTIONS

WHAT IS A PROPORTION?

A proportion is made up of two equivalent fractions combined with an equal sign.

$\frac{a}{b}=\frac{c}{d} \rightarrow a \cdot d = b \cdot c$

STEPS:

1. Cross multiply.
2. Divide by the coefficient.

EXAMPLE 1: Solve for the missing value in $\frac{45}{x}=\frac{15}{2}$.

1) $\frac{45}{x}=\frac{15}{2} \Longrightarrow 45 \cdot 2 = 15x$

$90 = 15x$

2) $90 = 15x \Longrightarrow 90 \div 15 = 15x \div 15 \Longrightarrow x = 6$

EXAMPLE 2: Solve for the missing value in $\frac{7}{8}=\frac{x}{4}$.

1) $\frac{7}{8}=\frac{x}{4} \Longrightarrow 7 \cdot 4 = 8x$

$28 = 8x$

2) $28 = 8x \Longrightarrow 28 \div 8 = 8x \div 8 \Longrightarrow x = 3.5$

Percent Problems Color and Solve

Instructions:

Solve each percent problem. Select the correct answer, then color the picture the indicated color.

What is 60% of 45?	75 Color the 1's RED	27 Color the 1's ORANGE
24 is what percent of 60?	0.4% Color the 2's ORANGE	40% Color the 2's YELLOW
72 is 80% of what number?	90 Color the 3's DARK GREEN	57.6 Color the 3's LIGHT GREEN
45 is 25% of what number?	11.25 Color the 4's BLUE	180 Color the 4's PURPLE
There are 24 cookies. 75% of the cookies are chocolate chip. How many are not chocolate chip?	18 Color the 5's DARK GREEN	6 Color the 5's LIGHT GREEN
85% of the students in the grade take art class. There are 102 students enrolled in art. How many total students are there in the grade?	120 Color the 6's RED	87 Color the 6's LIGHT BLUE
18 out of the 40 students who tried out for the basketball team made it. What percent made the team?	45% Color the 7's BLACK	55% Color the 7's PINK
Chris got an 80% on his history quiz. If he got 20 questions correct, how many questions were there in all?	16 Color the 8's GRAY	25 Color the 8's LIGHT BLUE

Name:_____ Date:_____

St. Patrick's Day

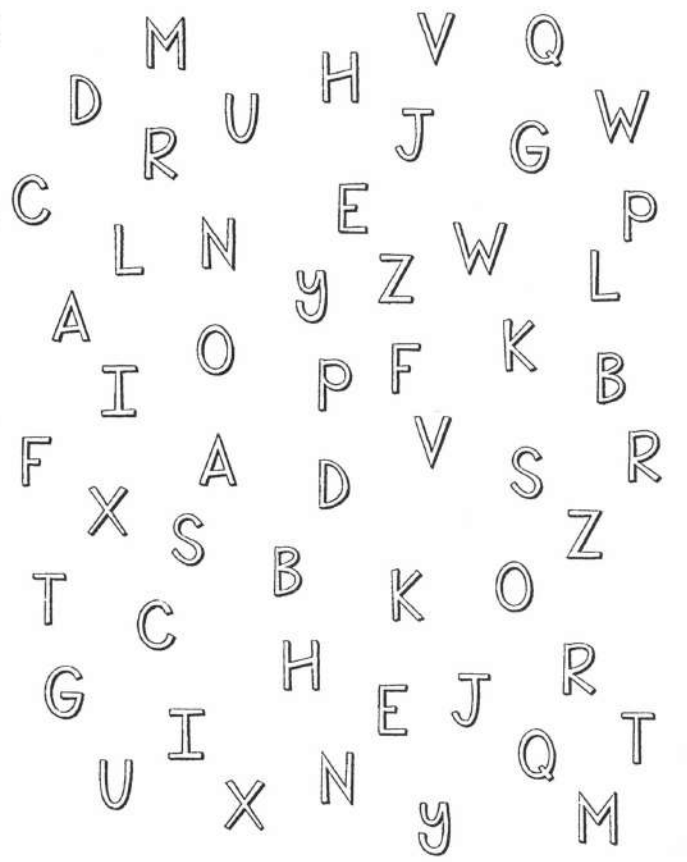
Color and Solve

Name: _____ Date: _____

PERCENT OF A NUMBER

DIRECTIONS: DETERMINE THE PERCENT OF EACH NUMBER ON THE LEFT AND DRAW A STRAIGHT LINE TO THE ANSWER ON THE RIGHT. FIND THE PROBLEM NUMBER AT THE BOTTOM OF THE PAGE AND WRITE THE LETTER THE LINE CROSSES IN THE BLANK SPACE.

1	12% OF 95
2	130% OF 7
3	76% OF 54
4	245% OF 22
5	9% OF 7.5



	41.04
	83.3
	5.38
	11.4
	0.675
	71.05
	8.98
	9.1
	79.16
	53.9

THERE ARE 30 KNOWN SPECIES OF THIS ANIMAL. THIS ANIMAL IS SMALL, WITH ROUNDED EARS AND A LONG TAIL. THIS ANIMAL HAS POOR EYE SIGHT, AND RELIES HEAVILY ON HEARING AND SMELL. THE AVERAGE GESTATION PERIOD OF THIS ANIMAL IS 20 DAYS AND IT IS BORN BLIND. THIS ANIMAL LIVE ON AVERAGE 1-3 YEARS DEPENDING ON ITS SURROUNDING. THIS ANIMAL IS A...

_____ _____ _____ _____ _____

4 2 1 5 3

PERCENT OF A NUMBER

METHOD 1 STEPS:

1. Drop the percent sign and place it over 100. Simplify if necessary.
2. Write the whole number as a fraction (the value of 1).
3. Multiply the two fractions. Simplify if necessary.

METHOD 2 STEPS:

1. Write the percent as a decimal.
2. multiply

METHOD 1: What is 6% of 300.

1) $6\% \longrightarrow \frac{6}{100} \longrightarrow \frac{6 \div 2}{100 \div 2} \longrightarrow \frac{3}{50}$

2) $300 \longrightarrow \frac{300}{1}$

3) $\frac{3}{\cancel{50}} \cdot \frac{\overset{6}{\cancel{300}}}{1} = \longrightarrow \frac{3}{1} \cdot \frac{6}{1} \longrightarrow \frac{18}{1} = 18$

METHOD 2: What is 20% of 450.

1) $20\% \longrightarrow 0.20$

2) $0.2 \cdot 450 = 90$

Name: _____ Date: _____

PERCENT CHANGE

DIRECTIONS: DETERMINE THE PERCENT OF CHANGE FOR EACH PROBLEM AND CIRCLE YOUR ANSWER. ROUND TO THE HUNDREDTHS PLACE WHEN NECESSARY. FIND THE PROBLEM NUMBER ON THE MYSTERY PICTURE AND SHADE IN THE ENCLOSED REGIONS WITH THE COLOR ASSIGNED TO YOUR ANSWER.

1	GARY WENT FROM 2 A'S TO 5 A'S. WHAT IS THE PERCENT CHANGE?	250% INCREASE: YELLOW	150% INCREASE: RED	300% INCREASE: ORANGE
2	LYN WENT FROM $25 TO $28. WHAT IS THE PERCENT CHANGE?	88% INCREASE: RED	12% INCREASE: ORANGE	30% INCREASE: LIGHT BLUE
3	CONNER HAD 32 BASEBALL CARDS IN MAY AND 75 BASEBALLS CARDS IN JULY.	134.38% INCREASE: BLACK	234.38% INCREASE: RED	430% INCREASE: YELLOW
4	WHITNEY ORIGINALLY HAD 10.1 OZ. OF BEVERAGE. AFTER DRINKING A LITTLE WATER, SHE HAD 9.2 OZ.	8% DECREASE: LIGHT BLUE	9.78% DECREASE: RED	8.91% DECREASE: YELLOW
5	THERE WERE ORIGINALLY 15 SLICES OF CAKE AT THE PARTY. NOW THERE ARE 9 SLICES.	40% DECREASE: LIGHT BLUE	60% DECREASE: ORANGE	40% INCREASE: BLACK

PERCENT OF CHANGE: INCREASE

WHAT IS A PERCENT CHANGE?

When an original value changes over time there is a percent change.

PERCENT INCREASE → when the new value is greater

PERCENT DECREASE → when the original value is greater

STEPS:

1. Identify the original value and the new value.
2. Find the change in the two values.
3. Use the formula: $\frac{\text{change}}{\text{original}}$ (divide)
4. Multiply by 100 to turn into a percent. (Round if necessary)

EXAMPLE 1: In 2000 the population of Denver, Colorado was 553,594. In 2010 the population was 600,158. What is the percent increase of the population?

1) original value: 553,594
new value: 600,158

2) $|553{,}594 - 600{,}158| = 46{,}564$

3) $\frac{46{,}564}{555{,}594} = 0.0841218$

4) $0.0841218 \cdot 100 = 8.41\%$

There is an 8.41% increase in population.

PERCENT OF CHANGE: DECREASE

WHAT IS A PERCENT CHANGE?

When an original value changes over time there is a percent change.

PERCENT INCREASE → when the new value is greater

PERCENT DECREASE → when the original value is greater

STEPS:

1. Identify the original value and the new value.
2. Find the change in the two values.
3. Use the formula: $\frac{\text{change}}{\text{original}}$ (divide)
4. Multiply by 100 to turn into a percent. (Round if necessary)

EXAMPLE 1: In 2000 the population of Ferriday, Louisiana was 3,713. In 2010 the population was 3,517. What is the percent decrease of the population?

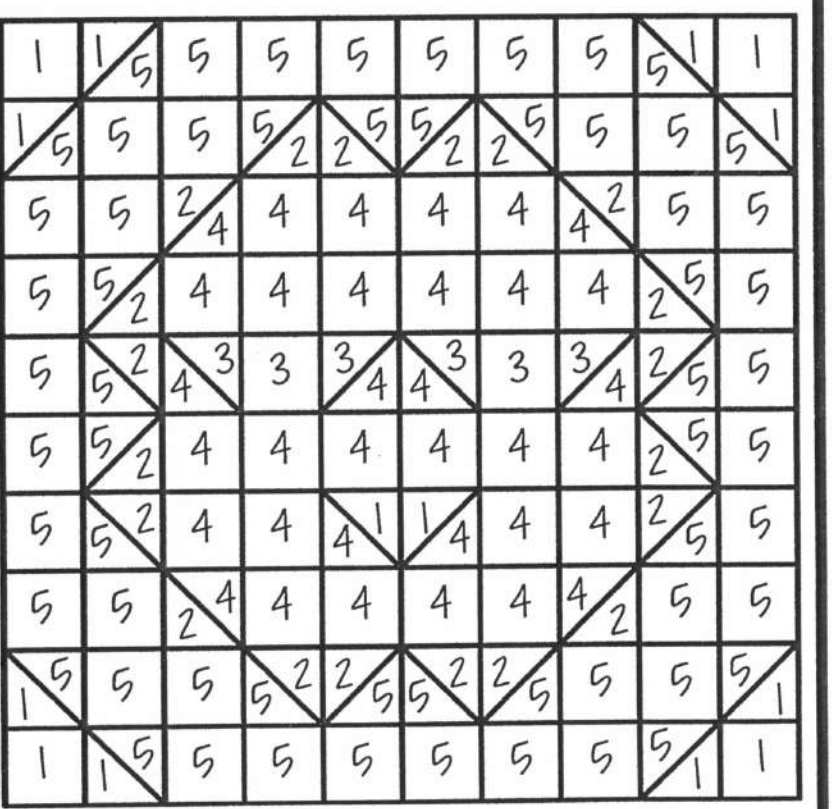
1) original value: 3,713
new value: 3,517

2) $|3{,}713 - 3{,}517| = 196$

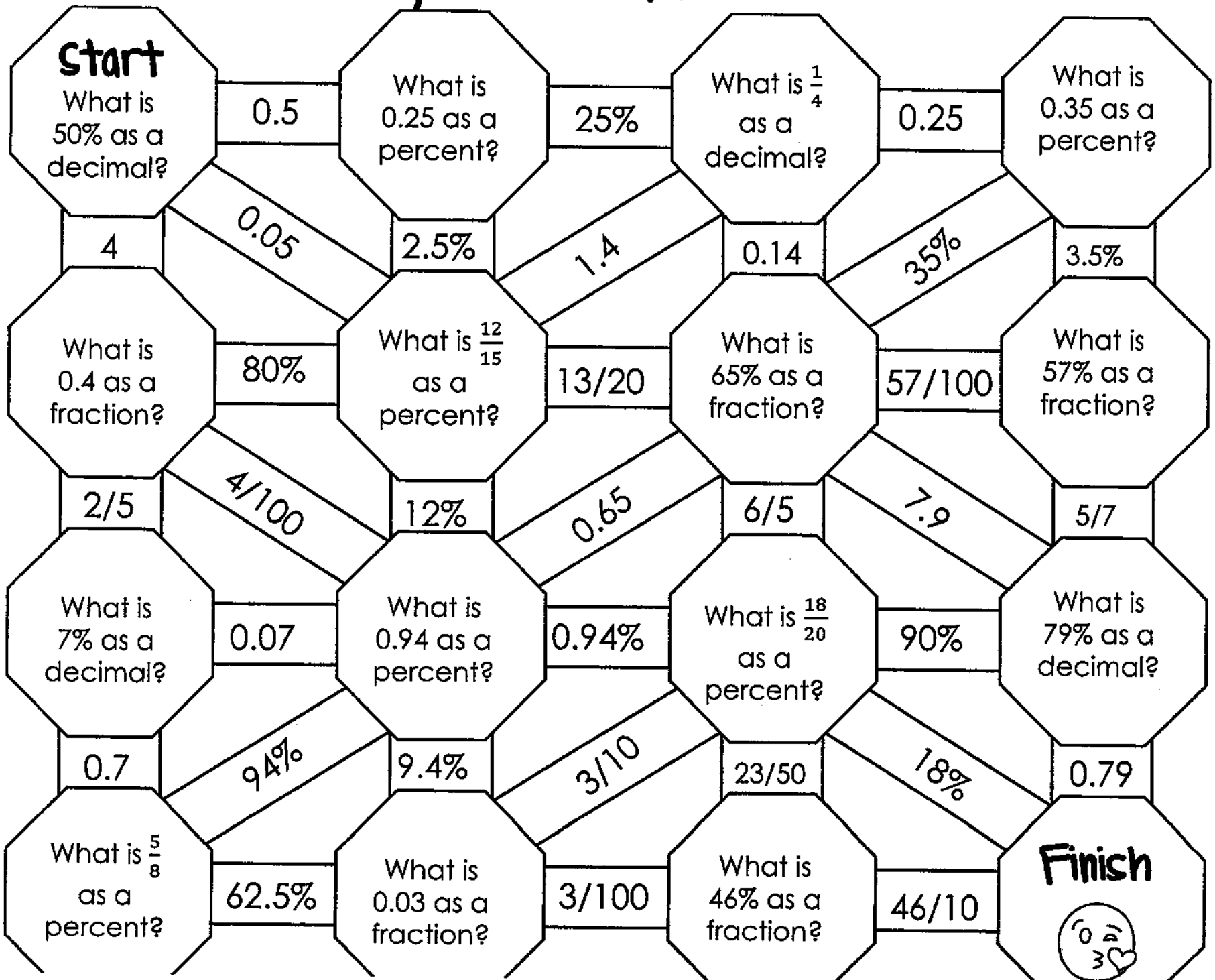
3) $\frac{196}{3{,}713} = 0.0527875\ldots$

4) $0.0527875 \cdot 100 = 5.28\%$

There is a 5.28% decrease in population.



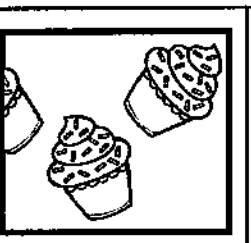
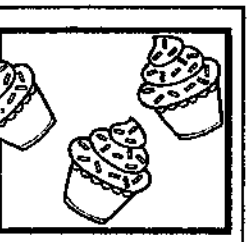
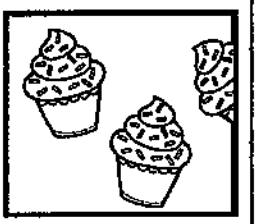
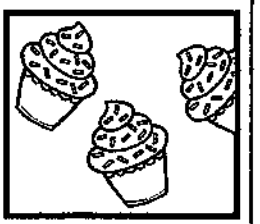
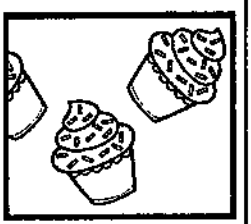
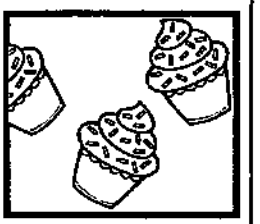
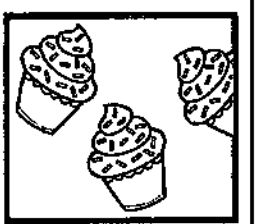
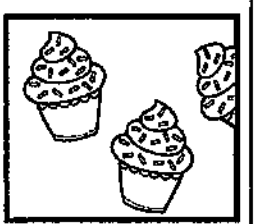
Percent, Fraction & Decimal Maze



Name: _____ Date: _____

TAX, TIP, AND MARKUP

DIRECTIONS: DETERMINE THE PRICE AFTER A TAX OR TIP AND CIRCLE YOUR ANSWER. ROUND TO THE NEAREST CENT WHEN NECESSARY. FIND THE CORRECT BOX IN THE GRID AT THE BOTTOM OF THE PAGE AND SKETCH THE IMAGE ASSIGNED TO THE SOLUTION.

B1 $24.98 WITH AN 18% TIP	$26.78: 	$29.48: 
A2 $13.45 WITH A 9.5% TAX	$14.40: 	$14.73: 
B2 $10.98 WITH A 10% TAX AND 20% TIP	$14.50: 	$14.27: 
A1 $137.62 WITH A 9% TAX AND 19% TIP	$176.15: 	$178.51: 

	A	B
1		
2		

TAX, TIP AND MARKUP

WHAT IS A TAX, TIP, OR MARKUP?

Taxes, tips and mark-ups are additional amounts added to an original price.

- When purchasing an item you typically pay a tax.
- When out to dinner you typically pay a tip to the waiter or waitress.
- When a business purchases items to be sold they typically mark up the price.

STEPS:

1. Identify the important parts.
2. Set up a percent proportion or percent equation.
3. Solve for the missing variable.

EXAMPLE 1: Bill and his family went out to dinner to celebrate his birthday. The bill was $156.40. If Bill plans to add an 18% tip, how much will the tip be?

1) The bill was $156.40. If Bill plans to add an 18% tip, how much will the tip be?

part= missing (x)

whole= 156.45

percent= 18% ⟹ 0.18

2) $x = 0.18 \cdot 156.45$

3) $x = \$28.152 \Longrightarrow \$28.15$

Name: _____ Date: _____

SIMPLE INTEREST

DIRECTIONS: DETERMINE THE SIMPLE INTEREST FOR EACH PROBLEM AND CIRCLE YOUR ANSWER. FIND THE PROBLEM NUMBER ON THE MYSTERY PICTURE AND SHADE IN THE ENCLOSED REGIONS WITH THE COLOR ASSIGNED TO YOUR ANSWER.

1	P = $2,000 R = 3% T = 2 YEARS	$1,200: DARK GRAY	$120: WHITE	$133: BLUE
2	P = $5,000 R = 6% T = 4 YEARS	$7,500: WHITE	$1,500: DARK GRAY	$1,200: LIGHT GRAY
3	P = $21,000 R = 2.5% T = 6 YEARS	$8,750: LIGHT GRAY	$5,040: BLUE	$3,150: BLACK
4	P = $11,500 R = 3.5% T = 8 YEARS	$503.13: WHITE	$3,220: BLUE	$4,025: DARK GRAY
5	P = $3,800 R = 5% T = 5 YEARS	$950: DARK GRAY	$1,520: LIGHT GRAY	$1,200: BLACK

SIMPLE INTEREST

WHAT IS SIMPLE INTEREST?

Simple interest is the amount of interest paid or earned for the use of money.

$$I = prt$$

I: simple interest
p: principal (amount started with)
r: interest RATE (percent)
t: time

STEPS:

1. Identify the important parts.
2. Plug the values into the equation from above.
3. Solve for the missing variable.

EXAMPLE 1: Megan took out a student loan for $9,075 with a 5% interest rate. How much simple interest will Megan pay if she takes 10 years to pay back the loan?

1) principal (p): $9,075
rate (r): 5% ⟹ 0.05
time (t): 10 years
simple interest (I): missing value x

2) $x = 9{,}075 \cdot 0.05 \cdot 10$

3) $x = \$4{,}537.50$

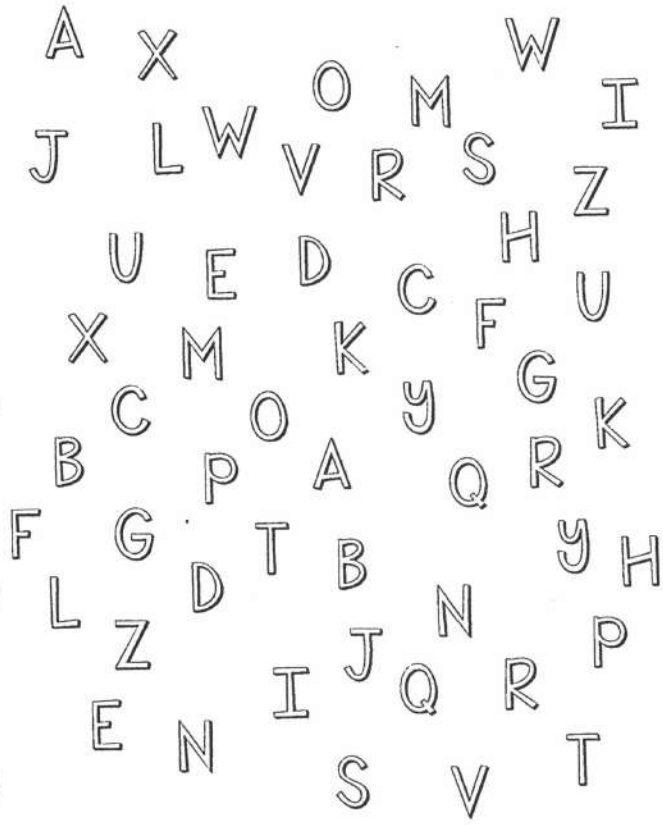
1	1	5	5	2	1	2	2	2	1
1	5	5	5	5	5	5	5	2	2
3	5	5	5	5	5	5	5	5	5
4	3	3	3	5	5	5	5	5	4
1	1	4	3	3	3	3	1	4	1
1	4	1	1	1	4	1	1	1	4
1	1	1	4	1	1	1	4	1	1
1	4	1	1	1	4	1	1	1	4
1	1	1	4	1	1	1	4	1	1
1	4	1	1	1	4	1	1	1	1

Name: _____ Date: _____

COMMISSION

DIRECTIONS: DETERMINE THE COMMISSION FOR EACH PROBLEM ON THE LEFT AND DRAW A STRAIGHT LINE TO THE ANSWER ON THE RIGHT. FIND THE PROBLEM NUMBER AT THE BOTTOM OF THE PAGE AND WRITE THE LETTER THE LINE CROSSES IN THE BLANK SPACE.

1	3% COMMISSION FOR $1,200 IN SALES.
2	4.5% COMMISSION ON $2,700 IN SALES.
3	2.5% COMMISSION ON $1,800 IN SALES.
4	5% COMMISSION ON $5,800 IN SALES.
5	3.8% COMMISSION ON $7,000 SALES.



$290
$40
$600
$121.50
$72
$266
$116
$45
$184.21
$36

THIS ANIMAL SOMETIMES HAS HORNS. THIS ANIMAL RANGES IN A VARIETY OF COLORS. THE LIFE EXPECTANCY FOR THIS ANIMAL RANGES FROM 10 TO 12 YEARS. THIS ANIMAL HAS GOOD HEARING BUT POOR DEPTH PERCEPTION. THIS ANIMAL TENDS TO TRAVEL IN GROUPS. THIS ANIMALS SCARES EASILY, AND WILL QUICKLY FLEE. THIS ANIMAL IS A...

_____ _____ _____ _____ _____

4 2 1 5 3

COMMISSION

WHAT IS A COMMISSION?

In some businesses workers will get paid a percent of their sales. This percentage is called a commission.

For example, a car salesman will make more money the more cars he sells. He makes a commission (a percent of) from each car sold.

STEPS:

1. Identify the important parts.
2. Set up a percent proportion or percent equation.
3. Solve for the missing variable.

EXAMPLE 1: Logan earns a 4% commission on every television he sells. If in the month of June Logan sells $2,750 worth of televisions, how much will he make in commission?

1) percent 4% ⟹ 0.04
total sales: $2,750
part: missing value (x)

2) $x = 2{,}750 \cdot 0.04$

3) $x = \$110$

Logan will earn $110 in commission.

Name: _____ Date: _____

DISCOUNT AND MARKDOWN

DIRECTIONS: CUT OUT THE PIECES AT THE BOTTOM OF THE PAGE. FOR EACH PROBLEM, DETERMINE THE PRICE AFTER A DISCOUNT AND GLUE THE CORRECT ANSWER NEXT TO THE PROBLEM IT MATCHES WITH. ROUND TO THE NEAREST CENT WHEN NECESSARY. TWO PIECES WONT BE USED.

$8.99 WITH 10% OFF

GLUE HERE

$24.32 WITH 25% OFF

GLUE HERE

$117.50 WITH 60% OFF

GLUE HERE

$7.64 WITH 15% OFF

GLUE HERE

DISCOUNT AND MARKDOWN

WHAT IS A DISCOUNT OR MARKDOWN?

Discounts are mark-downs are amounts deducted from an original price.

- When using a coupon in a store, you are applying a discount to an item.
- When an item is marked down that means it is listed at a lower price.

STEPS:

1. Identify the important parts.
2. Set up a percent proportion or percent equation.
3. Solve for the missing variable.

EXAMPLE 1: Jamie notices a sweater, originally priced at $48, is on sale for 20% off. How much will Jamie save on the sweater?

1) Jamie notices a sweater, originally priced at $48 is on sale for 20% off. How much will Jamie save on the sweater?

part: missing value (x)
whole: $48
percent: 20% ⟹ 0.2

2) $x = 48 \cdot 0.2$

3) $x = \$9.60$

Jamie will save $9.60 on the sweater.

SALE PRICE

WHAT IS A SALE PRICE?

A sale price is the price of an item after a discount or mark-down has been subtracted from the original cost.

- When an item is on sale, the sale price is the price the customer pays after the discount is applied.

STEPS:

1. Identify the important parts.
2. Set up a percent proportion or percent equation.
3. Solve for the missing variable.
4. Subtract from the original value.

EXAMPLE 1: Corey wants to purchase a sofa originally priced at $699 that is marked 15% off. How much will Corey pay for the sofa before taxes are applied.

1) Corey wants to purchase a sofa originally priced at $699 that is marked 15% off.

part: missing value (x)
whole: $699
percent: 15% ⟹ 0.15

2) $x = 699 \cdot 0.15$

3) $x = \$104.85$

4) $\$699 - \$104.85 = \$594.15$

$47	$31.25	$6.49
$24.12	$18.24	$8.09

Name _____

Percent Problems Card Sort

Read each story. Select a card to represent the final price of the item in each story. Select two cards showing different equations that can be used to calculate the final price. In each equation, F is the final price and C is the original cost.

A. A backpack has an original cost of $50. You have a coupon for 20% off.

(Equation)	(Simplified Equation)	(Final Price)

B. A pillow has an original cost of $20. The price will be marked up 50% to have your initial added.

(Equation)	(Simplified Equation)	(Final Price)

C. A box of donuts has an original cost of $10. It will be discounted 50% if it does not sell in a day.

(Equation)	(Simplified Equation)	(Final Price)

D. A box of cupcakes has an original cost of $30. An additional 30% fee is charged for delivery.

(Equation)	(Simplified Equation)	(Final Price)

E. A pair of shoes has an original cost of $100. They become popular, they are marked up 25%

(Equation)	(Simplified Equation)	(Final Price)

F. A haircut costs $30. You want to leave a 20% tip.

(Equation)	(Simplified Equation)	(Final Price)

G. A rental car costs $100 for one day. You have a coupon for 25% off.

(Equation)	(Simplified Equation)	(Final Price)

Answer Key

Percent Problems Card Sort

Read each story. Select a card to represent the final price of the item in each story. Select two cards showing different equations that can be used to calculate the final price. In each equation, P is the final price and C is the original cost. If no card is correct, fill in your own answer.

A. A blanket has an original cost of $50. You have a coupon for 20% off.

$40	$C - 0.20C = P$	$0.80C = P$

B. A pillow has an original cost of $20. The price will be marked up 50% to have your initial added.

$30	$C + 0.50C = P$	$1.50C = P$

C. A box of donuts has an original cost of $10. It will be discounted 50% if it does not sell in a day.

$5	$C - 0.50C = P$	$0.50C = P$

D. A box of cupcakes has an original cost of $30. An additional 30% fee is charged for delivery.

$39	$C + 0.30C = P$	$1.30C = P$

E. A suit has an original cost of $100. You have to pay a 25% markup to have it tailored.

$125	$C + 0.25C = P$	$1.25C = P$

F. A haircut costs $30. You want to leave a 20% tip.

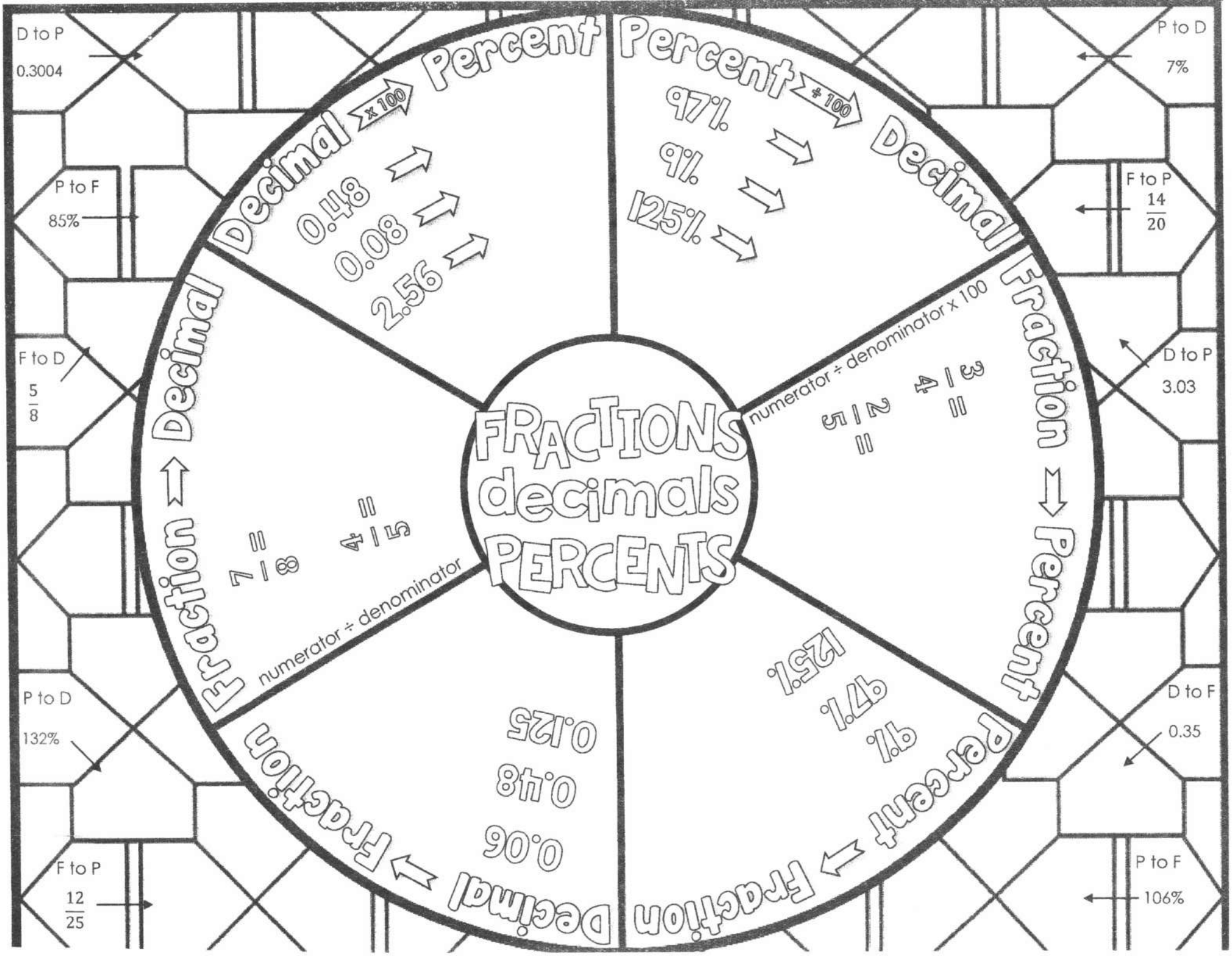
$36	$C + 0.20C = P$	$1.20C = P$

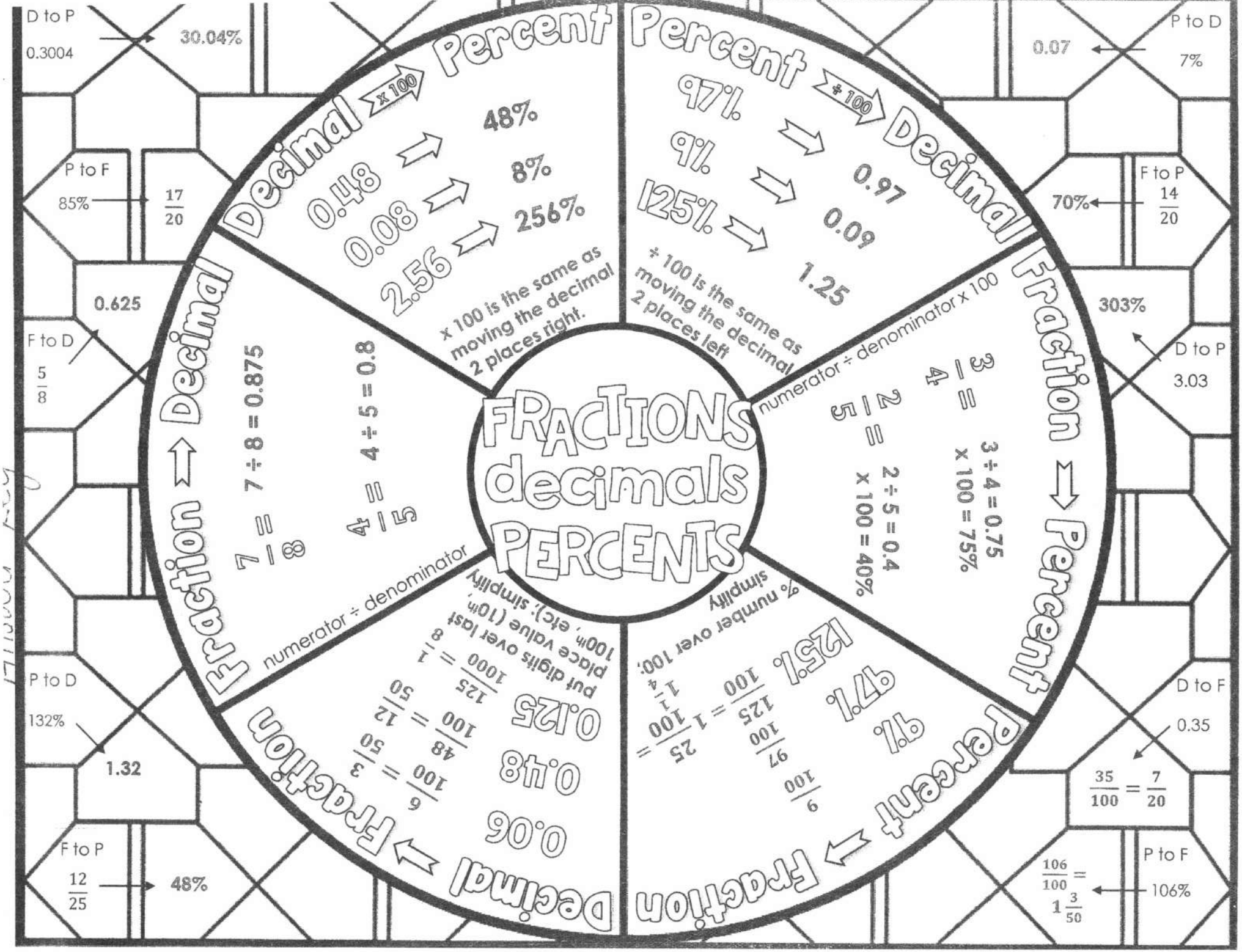
G. A game of bowling costs $10. You get a 5% student discount.

$9.50	$C - 0.05C = P$	$0.95C = P$

H. A rental car costs $100 for one day. You have a coupon for 25% off.

$75	$C - 0.25C = P$	$0.75C = P$


FRACTIONS
decimals
PERCENTS
Decimal → Percent
x 100
0.48
0.08
2.56
Percent → Decimal
÷ 100
97%
9%
125%
Decimal → Fraction
numerator ÷ denominator
7/8 =
4/5 =
Fraction → Decimal
numerator ÷ denominator x 100
5/2 =
4/3 =
Percent → Fraction
0.06
0.48
0.125
Fraction → Percent
9%
97%
125%
P to D
0.3004
P to D
7%
P to F
85%
F to P
14/20
F to D
5/8
D to P
3.03
P to D
132%
D to F
0.35
F to P
12/25
P to F
106%


FRACTIONS
decimals
PERCENTS
Percent ⇒ Decimal
÷ 100
97% → 0.97
9% → 0.09
125% → 1.25
÷ 100 is the same as moving the decimal 2 places left
Decimal ⇒ Percent
x 100
0.48 → 48%
0.08 → 8%
2.56 → 256%
x 100 is the same as moving the decimal 2 places right.
Fraction ⇒ Percent
numerator ÷ denominator x 100
3/4 = 3 ÷ 4 = 0.75 x 100 = 75%
2/5 = 2 ÷ 5 = 0.4 x 100 = 40%
Fraction ⇒ Decimal
numerator ÷ denominator
7/8 = 7 ÷ 8 = 0.875
4/5 = 4 ÷ 5 = 0.8
Decimal ⇒ Fraction
Put digits over last place value (10th, 100th, etc); simplify
0.06 = 6/100 = 3/50
0.48 = 48/100 = 12/50
0.125 = 125/1000 = 1/8
% ⇒ Fraction
% number over 100; simplify
9% = 9/100
97% = 97/100
125% = 125/100 = 1 25/100 = 1 1/4
D to P
0.3004
30.04%
P to D
0.07
7%
P to F
85%
17/20
F to P
14/20
70%
0.625
F to D
5/8
303%
D to P
3.03
P to D
132%
1.32
D to F
0.35
35/100 = 7/20
F to P
12/25
48%
P to F
106%
106/100 = 1 3/50