IMPACT ACADEMY

MATH NEST: SUMMER EDITION

Where every problem solved gets a hoot of approval!

Your 7th Grade math teacher is very excited to meet you and work with you in the upcoming year!

Please use the following problems to practice the prerequisite skills needed to be most prepared for 7th grade math. Your student should work through the following pages and **SHOW ALL WORK. DO NOT USE A CALCULATOR.** There are some helpful math tips included as you work through the pages to provide reminders on different topics.

When you have completed the summer packet, you may use your IXL login to practice some additional math skills (number sense and numeracy).

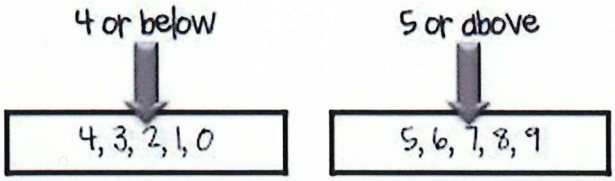
Please see the list below of possible incentives completing the packet. You will turn the packet into your teacher during the first week of school. You may choose two incentives with the submission of a completed packet.

INCENTIVES:

- Free admittance to a back-to-school event
- Lunch with the principal
- Chick-Fil-A Complimentary Meal Card
- Free HW or CW assignment pass (*See your teacher for when this can be used*)
- Impact Owl Badge & Certificate of Achievement
- Entry into a raffle - For an Impact Academy Shirt

Rules for Rounding

4 or below, leave it alone
5 or above, give it a shove



Follow the steps below when rounding a whole number:

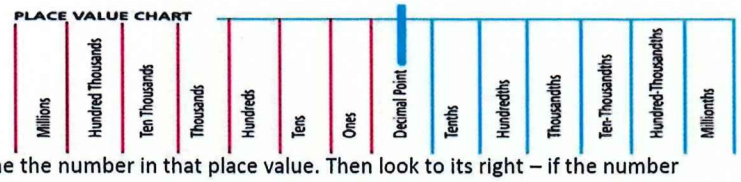
Directions: Round to the nearest **hundred.**

Step	What to Do	Example
Step 1	Underline the digit to be rounded. **(Hint: you'll know which digit to round by reading the directions!)**	5,682
Step 2	Look at the digit to the right of the underlined digit. Draw an arrow to that digit.	5,682
Step 3	If the digit with the arrow is 4 or below, the underlined digit stays the same. If it is 5 or above, add 1 to the underlined digit. Write down the digit.	5,682 7
Step 4	Replace all of the digits after the underlined digit with zeros. Keep all of the digits before the underlined digit the same.	5,682 5,700 final answer



Summer Math "Helpful Hints"

Place Value and Rounding Tips:



When asked to round a number, please underline the number in that place value. Then look to its right – if the number to its right is a 5 or greater, then the number you underlined will go up one; if the number to its right is less than 5, then the number you underlined will stay the same.

Adding and Subtracting with Decimals Tips:

Rule: LINE UP YOUR DECIMALS!!! You must put zeroes above or below "lonely" digits when subtracting.

Examples:

a.)15.7 + 6.3 =

$$\begin{array}{r} 15.7 \\ +\ 6.3 \\ \hline 22.0 \end{array}$$

b.) 9.3 – 2.56 =

$$\begin{array}{r} 9.30 \\ -2.56 \\ \hline 6.74 \end{array}$$

Dividing a decimal by a whole number:

RULE: Decimal goes straight up to the quotient (answer).

EXAMPLE:

$$\begin{array}{r} 24.03 \\ 2\overline{)48.06} \end{array}$$

hundreds	tens	ones		tenths	hundredths	thousandths	ten-thousandths	hundred-thousandths	millionths	ten-millionths
	3	4	.	0	5	9	2			

How do we round a decimal number? **Let's use an example to help illustrate the process...**

Example: Round 34.0592 to the **nearest hundredth. (The number is written in chart.)**

Step 1: Identify the place value that we are rounding to and place a square around that digit.

34.0592

Step 2: Look at the digit to the right of the boxed number and determine if the number is a low number or a high number.

34.0592

low numbers					**high numbers**				
0	1	2	3	4	5	6	7	8	9

Step 3: If the number to the right is a **low number, the boxed number stays the same.** If the number to the right is a **high number, the boxed number is rounded up one.**

34.0592

9 is a high number, so we change the 5 into a 6

Step 4: Drop all the digits to the right of the boxed number.

34.06

Round to the indicated place.

1. 1,474,946	2. 2,199,263.63
3. 20	4. 208.0
5. 89,347.2	6. 52.2948
7. 86.948	8. 1.74397
9. 3.1002	10. 6.08086
11. 10.782	12. 6,913.4
13. 5,381.8	14. 3.15
15. 2,389	16. 0.990

Converting Decimals, Fractions and Percents

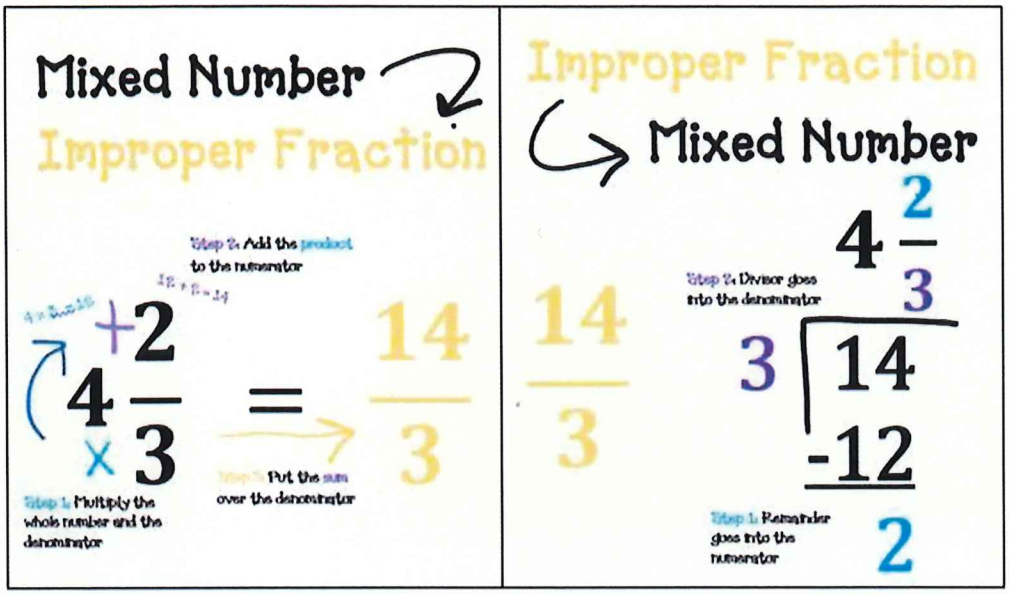
Decimal	Simplified Fraction	Percent
3.45		
	$\frac{3}{8}$	
		5%
	$\frac{13}{20}$	

Order the following numbers.

$\frac{2}{7}, \frac{1}{4}, \frac{2}{9}$	$\frac{1}{3}, \frac{6}{12}, \frac{1}{6}$
$\frac{5}{6}, 1.2, 12\%$	$\frac{12}{9}, 1.3, 13\%$
$\frac{3}{4}, 0.7\overline{5}, 76\%$	$\frac{9}{15}, 0.66, 6\%$
$\frac{16}{100}$, 0.27, 53%, $\frac{1}{5}$	$\frac{9}{100}$, 0.2, 57%, $\frac{4}{5}$
38%, $\frac{8}{25}$, 0.41	2.62, $2\frac{2}{5}$, 26.8%, 2.26, 271%

Fractions

Converting from Mixed Number to Improper & Back!



Mixed Number to Improper Fraction (ANSWERS NEED TO BE IN SIMPLIFIED FORM)

$2\frac{1}{2}$	$7\frac{4}{7}$
$10\frac{5}{6}$	$4\frac{3}{12}$
$1\frac{7}{8}$	$6\frac{2}{3}$

Improper Fraction to Mixed Number (ANSWERS NEED TO BE IN SIMPLIFIED FORM)

$\frac{10}{2}$	$\frac{49}{4}$
$\frac{15}{6}$	$\frac{33}{8}$
$\frac{53}{5}$	$\frac{136}{27}$

Adding and Subtracting Fractions:

RULE: You MUST have common denominators BEFORE you can add or subtract. Once you have common denominato only add or subtract the numerators (your denominator will stay the same)

Question to ask yourself: ***Do I have common denominators?***

IF YOU ANSWERED **YES,**
simply add or subtract the numerators, the denominator will stay the same

IF YOU ANSWERED **NO,**

1.) Find a common denominator (you can multiply the denominators that you have to get a common denominator)

2.)To get new numerators, multiply by the number that can be multiplied to make the denominators a true statement (whatever you do to the bottom, you do to the top)

Fractions

Adding & Subtracting with LIKE DENOMINATORS! (ANSWERS NEED TO BE IN SIMPLIFIED FORM)

$\frac{1}{6}+\frac{7}{6}$	$5\frac{1}{5}-\frac{2}{5}$
$4\frac{2}{7}+\frac{9}{7}$	$3\frac{1}{3}-3$
$\frac{1}{4}+3\frac{1}{4}$	$4\frac{1}{6}-\frac{11}{6}$
$10\frac{1}{4}+\frac{3}{4}-\frac{2}{4}$	$\frac{11}{7}-\frac{5}{7}+\frac{1}{7}$

Adding & Subtracting with UNLIKE DENOMINATORS! (ANSWERS NEED TO BE IN SIMPLIFIED FORM)

$\frac{5}{4}+\frac{4}{5}$	$\frac{5}{8}-\frac{1}{7}$
$\frac{2}{3}+\frac{5}{9}$	$\frac{4}{4}-\frac{1}{5}$
$\frac{1}{2}+\frac{1}{4}$	$7\frac{3}{4}-4\frac{1}{6}$
$4\frac{1}{3}+3\frac{3}{4}$	$5\frac{3}{8}-4\frac{3}{4}$
$6\frac{2}{3}+5\frac{1}{2}$	$16-7\frac{2}{3}$

Fraction Tips:



Multiplying Fractions:

RULE: Multiply the numerators and the denominators straight acros

Shortcut sometimes you can "cross simplify" before you multiply! This will give you small numbers to work wi

Dividing Fractions:

RULE: Multiply by the reciprocal (multiplicative inverse).

In middle school language:

Step 1: Change the sign to "times"

Step 2: Flip the back fraction over

Step 3: multiply straight across

$8-\frac{7}{4}+4\frac{5}{6}$	$6-1\frac{5}{7}+1$

Fractions

Multiply (ANSWERS NEED TO BE IN SIMPLIFIED FORM)

$\frac{3}{4}\cdot\frac{4}{9}$	$2\frac{2}{7}\cdot 3\frac{1}{8}$
$24\cdot\frac{5}{6}$	$4\frac{6}{7}\cdot\frac{8}{7}$
$5\frac{3}{4}\cdot\frac{6}{7}$	$4\frac{1}{4}\cdot 2$
$4\frac{1}{5}\cdot 2\frac{5}{7}$	$1\frac{4}{5}\cdot\frac{4}{3}$
$\frac{1}{2}\cdot\frac{6}{5}$	$3\frac{5}{8}\cdot 3\frac{2}{3}$
$5\frac{2}{9}\cdot 2$	$8\cdot\frac{3}{7}$
$\frac{5}{8}\cdot\frac{16}{9}$	$\frac{5}{9}\cdot\frac{1}{2}$

$2\frac{7}{8} \cdot 3\frac{1}{2}$	$2 \cdot 4\frac{1}{4} \cdot 2\frac{7}{10}$

Fractions

Division (ANSWERS NEED TO BE IN SIMPLIFIED FORM)

$\frac{6}{7} \div \frac{3}{7}$	$7\frac{2}{3} \div 1\frac{1}{6}$
$15 \div \frac{5}{6}$	$\frac{6}{7} \div \frac{7}{3}$
$5\frac{7}{8} \div 1\frac{3}{4}$**0**	$\frac{7}{9} \div \frac{1}{3}$
$10 \div \frac{1}{5}$	$\frac{7}{12} \div \frac{3}{4}$
$1\frac{4}{9} \div \frac{5}{4}$	$2\frac{3}{8} \div 4\frac{1}{2}$
$\frac{3}{7} \div \frac{2}{3}$	$4\frac{1}{10} \cdot 3\frac{1}{6}$

$6 \div \frac{9}{7}$	$2\frac{1}{3} \div 5\frac{1}{2}$
$1\frac{1}{6} \div \frac{2}{5}$	$1\frac{1}{3} \div \frac{1}{7}$

Decimals Name_____

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Add, Subtract, Multiply & Divide

Date_____ Period____

Evaluate each expression.

1) 3.7 + 2.3

2) 4.5 + 1.6

3) 7.2 − 3.7

4) 6.528 − 1.2

5) 6.4 − 6.1

6) 4.4 + 5.5

7) 3.3 − 0.4

8) 2.8 + 1.518

9) 5.8 − 2.5

10) 7.7 + 6.1

11) 6.4 − 0.6

12) 6.6 + 0.1

Find each product.

13) $1.06 \cdot 3$

14) $8.6 \cdot 2.6$

15) $1.8 \cdot 9.85$

16) $0.7 \cdot 8.1$

17) $8.9 \cdot 3.24$

18) $8.7 \cdot 2.6$

Find each quotient. Round to the nearest hundreth if needed.

19) $9.6 \div 3$

20) $3.16 \div 0.8$

21) $18 \div 8$

22) $11.8 \div 11.8$

23) $62.8 \div 4.5$

24) $81.8 \div 92.81$

Solve each equation.

1. $v-10=9$
2. $v-10=3$
3. $x-3=4$
4. $8=p-13$
5. $10=x-21$
6. $x-11=16$
7. $36.6=m-21.1$
8. $n-25.4=44.8$
9. $5\frac{1}{2}+p=6$
10. $\frac{4}{3}=n+\frac{1}{3}$
11. Lisa is cooking muffins. The recipe calls for 7 cups of sugar. She ahs already put in 2 cups. How many more cups does she need to put in?
12. $9+x=26$
13. $k+1=27$
14. $27=v+5$
15. $13+n=29$
16. $16=8+n$
17. $19=x+6$
18. $p+8=14.1$
19. $3.9=n+0.7$
20. $x-1^{1}{}_{2}=5f\ \ 4$
21. $2\frac{5}{12}=k-3\frac{1}{4}$
22. After paying \$5.12 for a salad, Norachai has \$27.10 . How much money did he have before buying the salad?

1. $\frac{x}{5}=2$

2. $\frac{a}{29}=5$

3. $2=\frac{m}{16}$

4. $20=\frac{n}{4}$

5. $21=\frac{x}{18}$

6. $\frac{x}{15}=11$

7. $\frac{x}{1.2}=7$

8. $\frac{x}{41.6}=2.34$

9. $1\frac{13}{64}=\frac{11}{8}v$

10. $\frac{3a}{5}=2m$

11. $22=11k$

12. $13n=377$

13. $418=22a$

14. $40=5p$

15. $168=84n$

16. $41k=2747$

17. $6.3n=8.19$

18. $28.8=18x$

19. $\frac{2k}{5}=\frac{3}{1}$

20. $\frac{7x}{9}\equiv\frac{15}{21}$

21. At a restaurant, Mike and his 3 friends decided to divide the bill evenly. If each person paid $13 then what was the total bill?

22. How many packages of diapers can you buy with $40 if one packages cost $8?

Order of Operations-PEMDAS Tips:

Do the operations in parentheses first.
Solve any exponents that may be in the problem
Then multiply or divide from left to right.
Then add or subtract from left to right

Parentheses

Exponents

Multiply

Divide

Add

Subract

Please Excuse My Dear Aunt Sally

One and Two-Step Equation Tips: Do the inverse operation to get a variable by itsel