FOR STUDENTS WHO HAVE COMPLETED 5TH GRADE MATH

(Entering Math 6 or Pre-Algebra)

Name: _____

Date: _____ Period: _____

Dear Parent/Guardian & 6th Grade Math Student,

Next school year, your child will be in a 6th grade math course and will need core prerequisite skills from 5th grade upon the start of school. You will find a review packet of skills which each child is expected to know upon the start of the year. Teachers will go over the answers from the packet during the first week of school and minimal direct instruction will occur on these concepts, as they are a review from 5th grade. Students may seek additional help during Recap to ask questions.

The following are the topics that students should know coming into 6th grade.

Whole Numbers
Number Theory
Order of Operations
Decimals

You may also access the following websites to assist your child.

www.purplemath.com
www.math.com
www.khanacademy.com

The answers are on the last page. Students who have more than 24 wrong answers should review the packet and online supplemental resources. It is imperative for future successes in math to have essential, baseline skills.

Have a great summer!

Math Department

PLEASE SHOW ALL WORK. STUDENTS SHOULD NOT USE A CALCULATOR FOR THIS PACKET.

NO CALCULATOR! SHOW ALL WORK!

Whole Numbers – Adding and Subtracting

A) 451 + 23 + 659

```
  1 1
 451
  23
 659
1133
```

B) 700 – 128

```
   6  9  10
  7  0  0
- 1  2  8
  5  7  2
```

NO CALCULATOR! SHOW ALL WORK!

1. 623 + 433 + 56	2. 893 – 395
3. 1987 + 432 + 543 +28	4. 196 – 129 =
5. 98 + 45 – 32	6. 65 – 32 + 77
7. 439 + 53 – 488	8. 763 – 492 + 157

A) 653 x 29

$$\begin{array}{r} {\scriptstyle 1\ \ 1\ \ }\\ 653\\ \times\ 29\\ \hline 5877\\ 13060\\ \hline 18937 \end{array}$$

1820 ÷ 28

$$\begin{array}{r} 65\\ 28\overline{)1820}\\ \underline{168}\\ 140\\ \underline{140} \end{array}$$

$$\begin{array}{rr} 28 & 28\\ \times\ 6 & \times\ 5\\ \hline 168 & 140 \end{array}$$

NO CALCULATOR! SHOW ALL WORK!

1. 975 x 8	2. 109 x 7	3. 23 x 15
4. 73 x 18	5. 471 x 16	6. 981 x 65
7. 2970 ÷ 5	8. 2124 ÷ 4	9. 32751 ÷ 9
10. 5472 ÷ 19	11. 42800 ÷ 25	12. 3348 ÷ 31

Parentheses (Grouping Symbols)	$[(7 - 4)^2 + 3] + 15$
Exponents	$= [3^2 + 3] + 15$
Multiply or Divide, from left to right	$= [3 \bullet 3 + 3] + 15$
Add or Subtract, from left to right	$= [9 + 3] + 15$
	$= 12 + 15$
	$= 27$

NO CALCULATOR!

1. $6 \div 3 + 2 \bullet 7$	2. $5 + 8 \bullet 2 - 4$	3. $16 \div 8 \bullet 2^2$
4. $10 \div (3 + 2) + 9$	5. $7 \bullet [(18 - 6) - 6]$	6. $3 + (27 \div 9) - 5$
7. $(5 - 3)^2 + 3$	8. $[10 + (25 \bullet 2)] \div 6$	9. $(9 \bullet 2) + 18 \div 6$

Prime Factorization

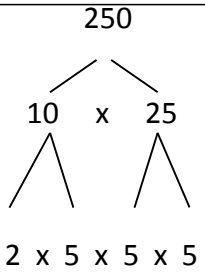
Use Euclid's Ladder (or a factor tree) to write the prime factorization.

$2 \mid 60$
$2 \mid 30$
$3 \mid 15$
5

60 = 2 x 2 x 3 x 5

$2 \mid 250$
$5 \mid 125$
$5 \mid 25$
5

125 = 2 X 5 X 5 X 5 **OR**



1. 64	2. 100	3. 72
4. 48	5. 36	6. 54

Find the GCF of 24 and 36.	24: 1, 2, 3, 4, 6, 8, **12**, 24 36: 1, 2, 3, 4, 6, 9, **12**, 18, 36	GCF of 24 and 36 is **12**.

No calculator! SHOW ALL WORK!

1. 18 and 54	2. 36 and 54
3. 24 and 60	4. 32 and 56
5. 100 and 75	6. 28 and 49
7. 35 and 50	8. 64 and 88

Find the LCM of 8 and 12.	8: 8, 16, **24**, 32, 40, 48, 56, . . . 12: 12, **24**, 36, 48, 60, 72, . . . LCM of 8 and 12 is **24**.

No calculator! SHOW ALL WORK!

1. 6 and 8	2. 4 and 6
3. 5 and 7	4. 12 and 18
5. 6 and 9	6. 12 and 9
7. 15 and 6	8. 14 and 4

Decimals – Adding and Subtracting

Rules:

1) Line up decimal points, if a number does not have a decimal point it is a whole number with the decimal point at the end.
2) Annex zeros to hold place.
3) Add or subtract vertically.
4) Bring down the decimal point.

4.1 + 3 + 5.61 + 21

$$\begin{array}{r} 4.1 \\ 3.0 \\ 5.61 \\ +21.0 \\ \hline 33.71 \end{array}$$

16 – 7.498

$$\begin{array}{r} 16.000 \\ -\ 7.498 \\ \hline 8.502 \end{array}$$

NO CALCULATOR! SHOW ALL WORK!		
1. 42.78 + 19.56	2. 0.0997 + 1.4	3. 6.29 + 5
4. 0.663 + 1.58	5. $62.74 + $1.75 + $12	6. 0.0674 + 0.12 + 0.0098
7. 40.75 – 17. 46	8. 0.95 – 0.68	9. 6 – 3.8
10. $60 - $31.74	11. $12.36 - $8.75	12. 21.007 – 4.678

Rules:

Multiplying

1) Line up digits, starting on the right.
2) Multiply
3) Place the decimal point in the answer by starting at the right and moving a number of places equal to the sum of the decimal places in both numbers multiplied.

(6.432)(4.15)

6.432 (3 decimal places)
x 4.15 (2 decimal places)
32160
64320
2572800
26.69280 (5 decimal places)

Dividing

1) If the divisor is not a whole number, move the decimal point To the right to make it a whole number and move the decimal Point in the dividend the same number of places.
2) Divide.
3) Bring the decimal point up.

27.216 ÷ 4.8

```
   5.67
48.)272.16
  -240
   321
  -288
    336
   -336
```

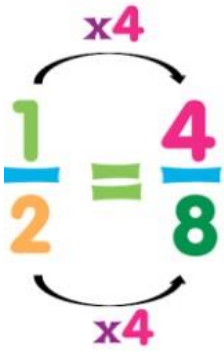
NO CALCULATOR! SHOW ALL WORK!

1. 5.4 x 0.07	2. 5.9 x 1.2
3. 69.3 x 0.15	4. 3.96 x 3.3

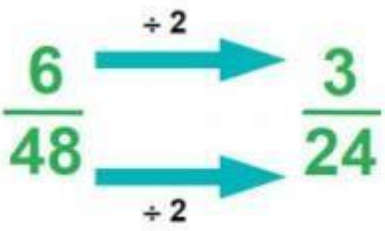
5. 9.01 x 0.48	6. 0.24 ÷ 0.8
7. 84.48 ÷ 0.88	8. 6.56 ÷ 4
9. 34.06 ÷ 0.13	10. 147 ÷ 0 .49

To find an equivalent fraction multiply or divide the numerator and denominator by the same value.

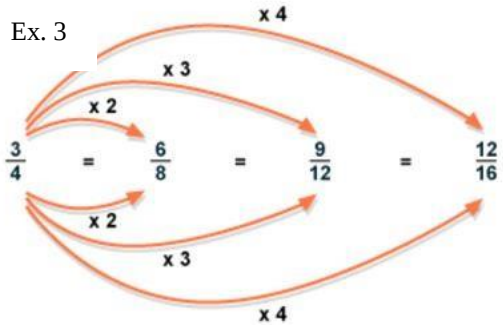
Ex. 1



Ex. 2



Ex. 3

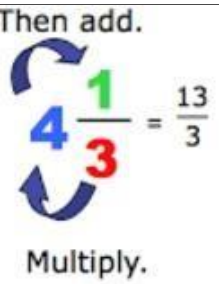


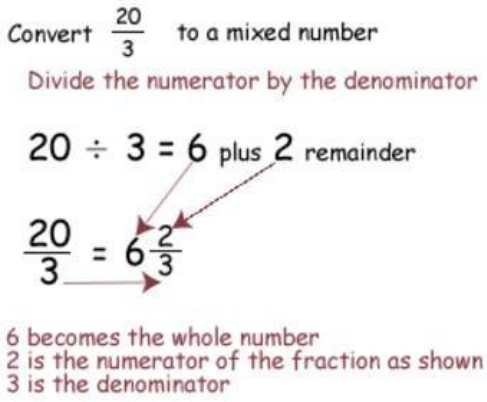
Name three equivalent fractions to the one given:

1. $\frac{4}{5}$	2. $\frac{10}{15}$
3. $\frac{1}{7}$	4. $\frac{16}{40}$
5. $\frac{12}{30}$	6. $\frac{6}{8}$
7. $\frac{2}{9}$	8. $\frac{14}{35}$
9. $\frac{18}{28}$	10. $\frac{80}{120}$

Multiply the whole number by the denominator and add the numerator.

Keep the same denominator.





Convert to Mixed Number or Improper Fractions:

1. ⁻ =	**2.** ⁻ =
3. ⁻ =	**4.** ⁻ =
5. ⁻ =	**6.** ⁻ =
7. ⁻ =	**8.** ⁻ =
9. ⁻ =	**10.** ⁻ =

Fractions – Adding and Subtracting

A. $\frac{3}{4} + \frac{1}{3} =$

$\frac{9}{12} + \frac{4}{12} =$

$\frac{13}{12} = 1\frac{1}{12}$

If the denominators are different, find the least common multiple of the two numbers and convert both fractions to the matching common denominator.

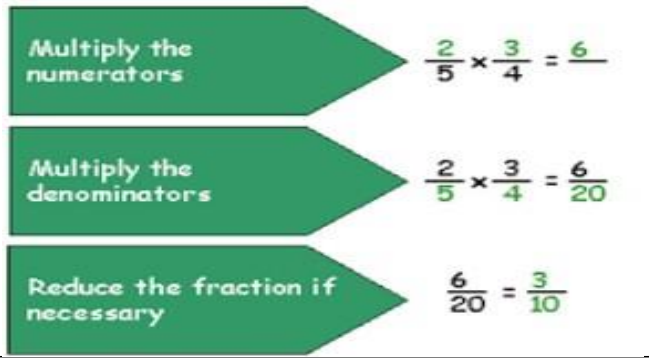
$\frac{5}{6} - \frac{3}{9} =$

$\frac{15}{18} - \frac{6}{18} =$

$\frac{11}{18}$

NO CALCULATOR! SHOW ALL WORK!

1. $\frac{2}{3} + \frac{1}{5} =$	2. $\frac{1}{7} + \frac{1}{3} =$	3. $\frac{2}{10} + \frac{1}{2} =$
4. $\frac{7}{8} - \frac{1}{2} =$	5. $\frac{5}{6} - \frac{2}{3} =$	6. $\frac{5}{9} - \frac{2}{4} =$
7. $\frac{7}{12} + \frac{2}{9} =$	8. $\frac{14}{15} + \frac{3}{5} =$	9. $\frac{9}{16} + \frac{5}{24} =$
10. $\frac{12}{16} - \frac{1}{4} =$	11. $\frac{27}{33} - \frac{5}{11} =$	12. $\frac{15}{18} - \frac{4}{9} =$



NO CALCULATOR! SHOW ALL WORK!

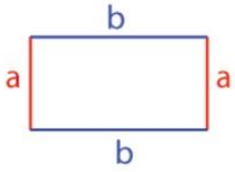
1. $\frac{1}{3} x \frac{1}{5} =$	2. $\frac{2}{7} x \frac{2}{5} =$	3. $\frac{4}{9} x \frac{1}{2} =$
4. $\frac{3}{8} x \frac{3}{4} =$	5. $\frac{9}{10} x \frac{1}{9} =$	6. $\frac{7}{12} x \frac{2}{5} =$
7. $\frac{6}{11} x \frac{2}{4} =$	8. $\frac{5}{6} x \frac{2}{9} =$	9. $\frac{12}{20} x \frac{3}{7} =$
10. $\frac{5}{13} x \frac{4}{6} =$	11. $\frac{15}{25} x \frac{5}{15} =$	12. $\frac{6}{10} x \frac{3}{9} =$

Perimeter:

Perimeter of a rectangle

The opposite sides of a rectangle are congruent.

$P = a + b + a + b$



$P = a + b + a + b$

Example:

If a = 3 units and b = 5 units then

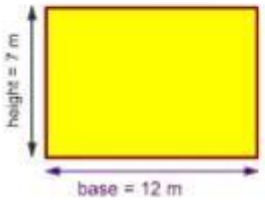
Perimeter (P) = 3 + 5 + 3 + 5 = 16 units

Area:

Area of Rectangle

The area of a Rectangle equals the base times the height

$A = b \times h$

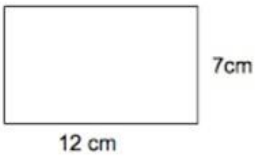


$A = b \times h$

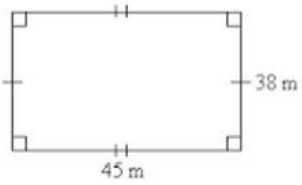
$A = 12 \times 7$

$A = 84\ m^2$

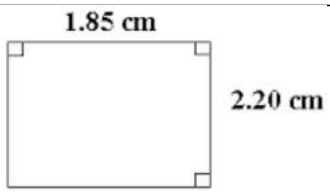
Find the perimeter and area of each shape:



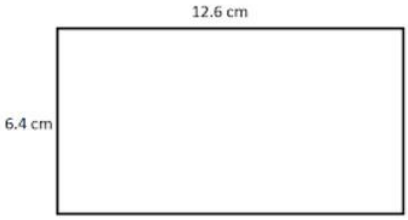
Perimeter:_____ **Area:**_____



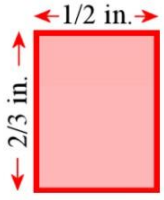
Perimeter:_____ **Area:**_____



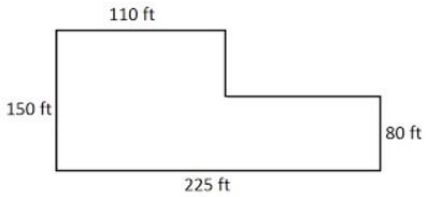
Perimeter:_____ **Area:**_____



Perimeter:_____ **Area:**_____



Perimeter:_____ **Area:**_____



Perimeter:_____ **Area:**_____

ANSWER KEY

Page 2
1. 1112
2. 498
3. 2990
4. 67
5. 111
6. 110
7. 4
8. 428

Page 3
1. 7800
2. 763
3. 345
4. 1314
5. 7536
6. 63675
7. 594
8. 531
9. 3639
10. 288
11. 1712
12. 108

Page 4
1. 16
2. 17
3. 8
4. 11
5. 42
6. 1
7. 7
8. 10
9. 21

Page 5
1. 2x2x2x2x2x2
2. 2x2x5x5
3. 2x2x2x3x3
4. 2x2x2x2x3
5. 2x2x3x3
6. 2x3x3x3

Page 6
1. 18
2. 18
3. 12
4. 8
5. 25
6. 7
7. 5
8. 8

Page 7
1. 24
2. 12
3. 35
4. 36
5. 18
6. 36
7. 30
8. 28

Page 8
1. 62.34
2. 1.4997
3. 11.29
4. 2.243
5. 76.49
6. .1972
7. 23.29
8. 0.27
9. 2.2
10. 28.26
11. 3.61
12. 16.329

Page 9-10
1. 0.378
2. 7.08
3. 10.395
4. 13.068
5. 4.3248
6. 0.3
7. 96
8. 1.64
9. 262
10. 300

Page 11 (these are some possible answers)
1. 8/10, 16/20, 12/15
2. 2/3, 20/30, 40/60
3. 2/14, 3/21, 4/28
4. 8/20, 4/10, 2/5
5. 6/15, 2/5, 24/60
6. ¾, 12/16, 24/32
7. 4/18, 6/27, 8/36
8. 2/5, 28/70, 140/350
9. 9/14, 36/56, 180/280
10. 2/3, 40/60, 8/12

Page 12
1. 7/2
2. 3 1/2
3. 23/3
4. 5 1/6
5. 43/5
6. 8 2/9
7. 25/9
8. 4 5/11
9. 125/10
10. 9 5/13

Page 13
1. 13/15
2. 10/21
3. 7/10
4. 3/8
5. 1/6
6. 1/18
7. 29/36
8. 1 8/15
9. 37/48
10. 1/2
11. 12/33
12. 7/18

Page 14
1. 1/15
2. 4/35
3. 2/9
4. 9/32
5. 1/10
6. 7/30
7. 3/11
8. 5/27
9. 9/35
10. 10/39
11. 1/5
12. 1/5

Page 15
1. p=38cm, a=84 sq cm
2. p=166m, a-1710 sq m
3. p=8.1 cm, a=4.07 sq cm
4. p=38cm, a=80.64 sq cm
5. p= 2 1/3in, a=1/3 sq in
6. p=750 ft, a=25,700 sq ft