Sandia Prep
Summer Math Packet for Incoming Sixth Graders

- This packet is designed to help you retain many of those math concepts you learned during your elementary school years.

- Answers to most of the problems are provided on page 15. It's important to receive immediate feedback so you can make sure you're doing the problems correctly.

- ***You don't have to complete this packet all at once!*** Pace yourself over the summer. Here's a suggestion: divide up the problems and work them throughout the summer. For example, you can divide up this packet into five sessions:

Session 1 **(perhaps mid - June?)**
➢ Five-Minute Multiplying Frenzy ($2-3$ of them) ➢ Vocabulary Crossword Puzzle
Session 2 **(perhaps late June?)**
➢ Five-Minute Multiplying Frenzy ($2-3$ of them) ➢ Operations with Whole Numbers: Problems $1-24$
Session 3 **(perhaps mid-July?)**
➢ Five-Minute Multiplying Frenzy (2 of them) ➢ Operations with Decimals: Problems 25 – 47
Session 4 **(perhaps late July?)**
➢ Five-Minute Multiplying Frenzy (2 of them) ➢ Operations with Fractions: Problems $48-72$
Session 5 **(perhaps early August?)**
➢ Five $-$ Minute Multiplying Frenzy (the rest of them) ➢ $50-20-10$: What Every Middle School Student Should Know

- On page 14 you'll find a set of problems that, as the title suggests, are ***just for fun***. Don't worry if you don't understand all of them! You may find some of them interesting!

Five Minute Multiplying Frenzy

How much of each chart can you complete in five minutes? Set a timer, stop after five minutes, write the number correct out of 100, and write the date. Is there room for improvement as the summer progresses?

×	10	5	9	2	3	6	8	4	11	7
9										
8										
5										
2										
7										
6										
4										
12										
10										
3										

Time: _____ $\frac{\quad}{100}$

×	8	10	4	3	9	12	2	7	11	6
10										
5										
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2										
8										

Time: _____ $\frac{\quad}{100}$

×	6	3	2	12	8	4	11	5	9	10
2										
12										
4										
6										
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7										
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10										
11										
3										

Time: _____ $\frac{\quad}{100}$

×	9	2	10	4	5	6	12	7	8	3
11										
2										
12										
4										
6										
9										
3										
7										
8										
10										

Time: _____ $\frac{\quad}{100}$

×	4	11	9	3	2	6	5	7	10	12
10										
3										
12										
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9										
11										
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Time: _____ $\frac{\quad}{100}$

×	5	7	11	9	6	12	4	8	10	2
9										
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2										
6										

Time: _____ $\frac{\quad}{100}$

×	4	12	10	3	7	5	6	2	9	11
2										
3										
5										
8										
6										
12										
7										
4										
11										
10										

Time: _____ $\frac{\quad}{100}$

×	6	8	11	9	12	5	4	3	7	2
2										
12										
6										
10										
9										
4										
11										
8										
7										
3										

Time: _____ $\frac{\quad}{100}$

×	8	4	11	9	6	2	3	7	5	10
5										
9										
2										
4										
3										
12										
8										
6										
10										
7										

Time: _____ $\overline{100}$

×	3	2	9	5	12	11	8	10	6	7
8										
6										
3										
12										
10										
11										
9										
7										
5										
4										

Time: _____ $\overline{100}$

×	4	12	10	3	7	5	6	2	9	11
3										
7										
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12										
8										
2										
6										
5										
11										
10										

Time: _____ $\overline{100}$

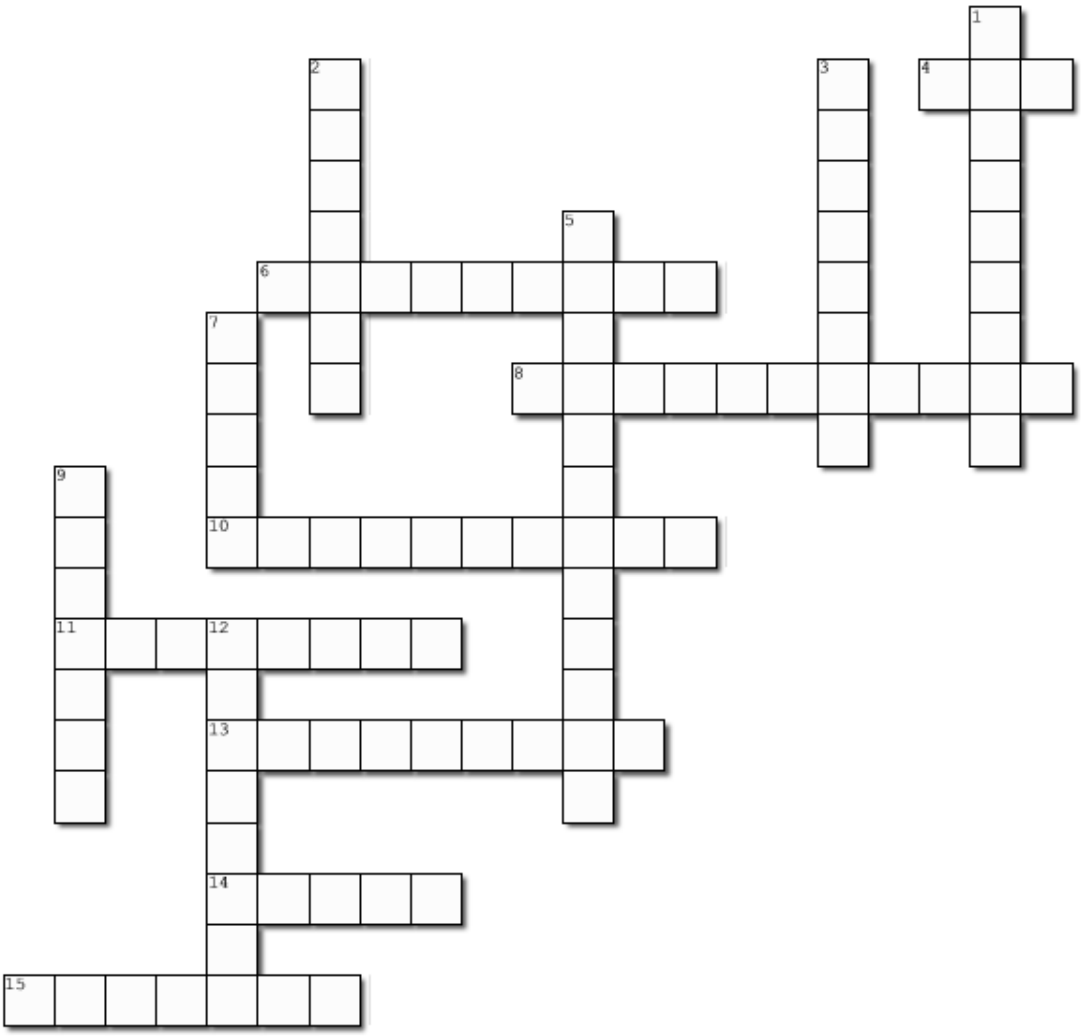
×	3	7	4	6	12	8	5	9	2	11
3										
9										
5										
11										
8										
2										
12										
6										
4										
10										

Time: _____ $\overline{100}$

Name:_____

Math Vocabulary

Complete the crossword puzzle below



Created using the Crossword Maker on TheTeachersCorner.net

squared | sum | prime | cubed | difference | improper | product | dividend | numerator | quotient | denominator | factors | composite | mixed number | perimeter

Across

4. the answer to an addition problem
6. a number that has factors other than one and itself
8. the bottom number in a fraction
10. the answer to a subtraction problem
11. the number that is divided by another number
13. the sum of all the sides of a figure
14. a number whose only factors are one and itself
15. when a number is raised to the second power x^2

Down

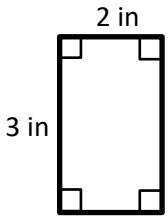
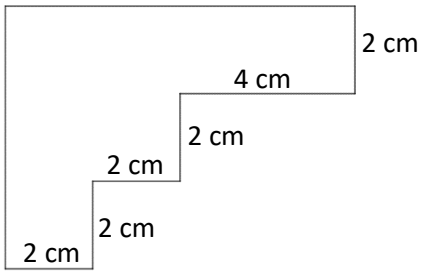
1. the top number in a fraction
2. numbers that are multiplied together to form the product
3. the answer to a division problem
5. a whole number and a fraction represented together
7. when a number is raised to the third power x^3
9. the answer to a multiplication problem
12. when the numerator is greater than the denominator in a fraction

Can you add, subtract, multiply, and divide whole numbers?

#1 – 4: Find each sum.

1	$460 + 408$	**2**	$222 + 10$
3	$352 + 428$	**4**	$393 + 485$

#5 – 6: Find the perimeter of each figure. (The perimeter is the sum of all the sides.)

5		**6**	

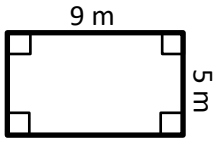
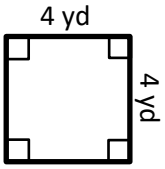
#7 – 10: Find each difference.

7	$409 - 247$	**8**	$476 - 91$
9	$495 - 131$	**10**	$382 - 214$

#11 – 14: Find each product.

11	0×19	**12**	20×19
13	8×14	**14**	32×17

#15 – 16: Find the area of each rectangle. $A = l \times w$

15		**16**	

#17 – 20: Find each quotient.

17	$2548 \div 28$	**18**	$3717 \div 9$
19	$1880 \div 40$	**20**	$1596 \div 38$

Order of Operations! PEMDAS

#21 – 24: Evaluate each expression.

21	$6 + 4 - (12 + 8) \div 10$	**22**	$\big((25 - 1) \times 2\big) \div 6$
23	$(12 + 1 + 6 - 9) \div 10$	**24**	$1 + 4 - 4 + 10 \times 5$

How are your decimals?

#25 – 30: Round each to the place indicated.

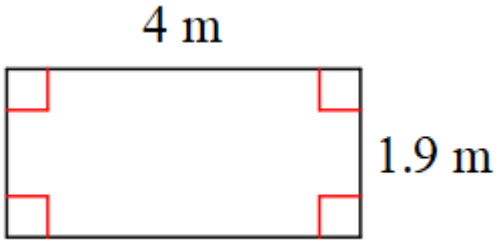
25	6.3631; *hundredths*	**26**	3.768906; *ten – thousandths*
27	1.698704; *thousandths*	**28**	6.88872; *ten – thousandths*
29	1.85; *tenths*	**30**	8.8438; *tenths*

#31 – 34: Find each sum.

31	$0.9 + 4.7$	**32**	$4.3 + 4.4$
33	$6.8 + 1.4$	**34**	$1.8 + 3.99$

#35: Find the perimeter of the rectangle. (The perimeter is the sum of all the sides.)

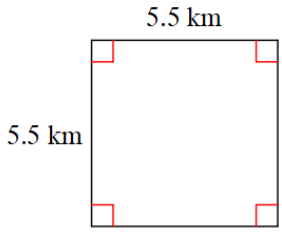
35



#36 – 39: Find each difference.

36	$5.015 - 2.4$	**37**	$3.6 - 2.8$
38	$5.9 - 4.6$	**39**	$7.9 - 3.4$

#40 – 43: Find each product.

40	8.3×8.3	**41**	5.4×6
42	3.6×3.8	**43**	Find the area of the square. 

#44 – 47: Find each quotient.

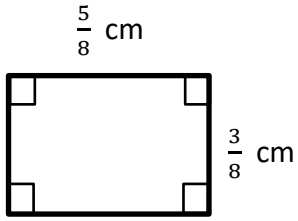
44	$7.7 \div 2.5$	**45**	$5.76 \div 3.2$
46	$5.7 \div 5$	**47**	$7.2 \div 2$

How are your fractions?

#48 – 55: Simplify each fraction. Write your answer as a mixed number when possible.

48	$\frac{4}{8}$	**49**	$\frac{60}{160}$
50	$\frac{9}{72}$	**51**	$7\frac{20}{60}$
52	$\frac{20}{16}$	**53**	$\frac{100}{40}$
54	$\frac{36}{27}$	**55**	$\frac{42}{36}$

#56 – 60: Find each sum.

56	$\frac{2}{7}+\frac{4}{7}$	**57**	$\frac{6}{7}+\frac{3}{7}$
58	$\frac{1}{4}+\frac{5}{8}$	**59**	$\frac{7}{8}+1\frac{1}{8}$
60	Find the perimeter of the rectangle. 		

#61 – 64: Find each difference.

61	$4\frac{5}{6}-\frac{1}{2}$	**62**	$4\frac{3}{5}-\frac{1}{3}$
63	$4\frac{7}{8}-\frac{1}{12}$	**64**	$3\frac{3}{4}-\frac{5}{8}$

#65 – 68: Find each product.

65	$\frac{3}{4}\times\frac{4}{5}$	**66**	$3\frac{3}{5}\times\frac{15}{2}$
67	$\frac{1}{3}\times\frac{5}{7}$	**68**	$\frac{1}{2}\times\frac{3}{5}\times\frac{10}{3}$

#69 – 72: Find each quotient.

69	$\frac{16}{9}\div\frac{8}{7}$	**70**	$\frac{4}{9}\div\frac{1}{2}$
71	$\frac{9}{8}\div\frac{3}{5}$	**72**	$2\frac{1}{2}\div\frac{5}{2}$

Just for Fun…

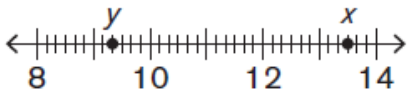
Here is a page from the 2018-19 ***Mathcounts*** handbook. You may find some of these problems interesting! These are ***just for fun.***

73 _____ combi-nations

Bob has 40 cents in his pocket. If Bob has no pennies, how many different combinations of quarters, dimes and/or nickels could he have?

74 _____

On the number line shown, what is the value of $x - y$? Express your answer as a mixed number.



75 _____

Ted flips a coin that is equally likely to land heads up or tails up. Ted flips the coin 10 times, and each time it lands heads up. What is the probability that the next flip will also land heads up? Express your answer as a common fraction.

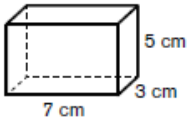
76 _____

What is the value of $9 + 5 \times 3 - 8 \div 2$?

77 _____

If two more than three times x is equal to five less than ten times x, what is the value of x?

78 _____ cm^3



What is the volume of a rectangular prism of height 5 cm, width 7 cm and depth 3 cm?

79 _____

What is the average of the prime numbers between 20 and 30?

80 _____ lines

How many lines of symmetry does an isosceles right triangle have?

81 _____

What is the quotient when 1,000,000,000 is divided by $2^8 \times 5^7$?

82 _____ people

Of 1000 people surveyed, one-third of the 630 people who reported owning a cat also own a dog. If each person surveyed owns a cat, a dog or both, how many own a dog?

ANSWERS!

1	868	**2**	232	**3**	780	**4**	878	**5**	10 in
6	258 cm	**7**	162	**8**	385	**9**	364	**10**	168
11	0	**12**	380	**13**	112	**14**	544	**15**	45 cm^2
16	16 yd^2	**17**	91	**18**	413	**19**	47	**20**	42
21	8	**22**	8	**23**	1	**24**	51	**25**	6.36
26	3.7689	**27**	1.699	**28**	6.8887	**29**	1.9	**30**	8.8
31	5.6	**32**	8.7	**33**	8.2	**34**	5.79	**35**	11.8 m
36	2.615	**37**	0.8	**38**	1.3	**39**	4.5	**40**	68.89
41	32.4	**42**	13.68	**43**	30.25 km^2	**44**	3.08	**45**	1.8
46	1.14	**47**	3.6	**48**	$\frac{1}{2}$	**49**	$\frac{3}{8}$	**50**	$\frac{1}{8}$
51	$7\frac{1}{3}$	**52**	$1\frac{1}{4}$	**53**	$2\frac{1}{2}$	**54**	$1\frac{1}{3}$	**55**	$1\frac{1}{6}$
56	$\frac{6}{7}$	**57**	$1\frac{2}{7}$	**58**	$\frac{7}{8}$	**59**	2	**60**	2 cm
61	$4\frac{1}{3}$	**62**	$4\frac{4}{15}$	**63**	$4\frac{19}{24}$	**64**	$3\frac{1}{8}$	**65**	$\frac{3}{5}$
66	27	**67**	$\frac{5}{21}$	**68**	1	**69**	$1\frac{5}{9}$	**70**	$\frac{8}{9}$
71	$1\frac{7}{8}$	**72**	1						

Just for Fun…

73	7	**74**	$4\frac{1}{6}$	**75**	$\frac{1}{2}$	**76**	20	**77**	1
78	105 *cubic cm*	**79**	26	**80**	1	**81**	50	**82**	580