Entering 7th Grade Summer Math Work



WCS 2025

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Dear Families,

It is so important for children to keep learning over the summer! Research shows that students can lose up to 2.6 months of math learning during the summer months. Research also shows that just 2 hours of work each week in math can help prevent this summer learning loss. The work in this packet has been designed to review last year's learned math skills and prepare your child for success in math this year. This will also be your child's first math grade of the year and you will need to send it to school when we return in the fall.

In this packet, you will find about 10 weeks of work, with 1-2 hours of work each week. We suggest you create a schedule that works for your family each week. Maybe you spend 15-30 minutes in the mornings working on this math work each day or maybe your child completes it all on Sunday evenings—whatever works for you. Please do try to spread it over 10 weeks- don't try to do it all the last week of summer!

If you have any questions, please reach out to Mr. Jack- our math specialist at: jackh@wissahickoncharter.org

Happy summer!



Adding & Subtracting Decimals

I. Write the problem vertically, lining up the decimal points.

2. Add additional zeroes at the end, if necessary, to make the numbers have the same number of decimal places.

14.200

ex: 14.2 - 7.934

3. Add/subtract as if the numbers are whole numbers

4. Bring the decimal point straight down

Multiplying Decimals

1. Write the problem vertically with the numbers lined up to the right. The decimal points do NOT need to be lined up.

ex: 6.94 x 7.8

2. Ignore the decimals and multiply as if the numbers are whole

numbers.

6.94 → 2 decimal places 7.8 → 1 decimal place + 5552 3 decimal places

3. Count the total number of decimal places in the factors and put a decimal point in the product so that it has that same number of decimal places.

Dividing Decimals

- 1. Write the dividend under the long division symbol and the divisor to the left of it.
- 2. Move the decimal point in the divisor after the number to turn it into a whole number and then move the decimal in the dividend the same number of places. Then bring it up.
- 3. Divide as if the numbers are both whole numbers.
- 4. Annex zeros in the dividend as needed until there is no remainder. If your answer is a repeating decimal, write the answer using bar notation.

Order of Operations

I. Grouping Symbols (parentheses, brackets, etc.)

ex: 5 + 4(3 - 1.2)

2. Exponents

5 + 4(1.8)

3. Multiplication \mathcal{E} Division (left to right)

5 + 7.2

4. Addition & Subtraction (left to right)

12.2

Evaluate each expression.

Evaluate each expression.				
I. 5.983 + 2.99	2. 224 - 56.73	3. 6.12 - 4.923		
4. 24.5 · 3.2	5. 0.23 · 7	6. 3.86 · 9.15		
7. 14.8 ÷ 5	8. 46.3 ÷ 1.5	9. 147 ÷ 2.25		
10. 24.33 - 2.5 · 7	11. 3.9 + 4.5 ²	12. 9.25(18.4 - 2 · 1.2)		

Solve each word problem, showing all work.

	13.	Jeff had \$46.18 in his wallet Monday morning.
		He gave half of his money to his brother. He
		then bought two donuts for \$0.75 each and a
		cup of coffee for \$2.99. How much money did
		Jeff have left?
ı		

14. Five friends split a \$65.20 bill at a restaurant. They also each left \$2.75 for the tip. How much money did each person pay in all?

Adding Fractions & Mixed Numbers

1. Find a common denominator for the two fractions.

ex:
$$3\frac{3}{4} + 2\frac{1}{2}$$

2. Add the two numerators and keep the denominator the same.

 $3\frac{3}{4} = 3\frac{3}{4}$ $2\frac{1}{2} = 2\frac{2}{4}$

3. Add the whole numbers.

 $5\frac{5}{4} = \boxed{6\frac{1}{4}}$

4. Simplify the answer and/or change improper fraction answers to mixed numbers.

Subtracting Fractions & Mixed Numbers

I. Find a common denominator for the two fractions.

- ex: $5\frac{1}{4} 1\frac{2}{3}$
- 2. Subtract the two numerators and keep the denominators the same. If the top numerator is smaller than the bottom numerator, borrow from the whole number and rename the top fraction.

 $5\frac{1}{4} = 5\frac{3}{12} = 4\frac{15}{12}$ $-\frac{12}{3} = 1\frac{8}{12} = 1\frac{8}{12}$

3. Subtract the whole numbers.

 $3\frac{7}{12}$

4. Simplify the answer.

Multiplying Fractions & Mixed Numbers

I. Turn any mixed numbers and whole numbers into improper fractions.

ex:
$$2\frac{1}{6} \cdot \frac{4}{7}$$

- 2. Cross-simplify if possible.
- 3. Multiply the numerators and then multiply the denominators

- $\frac{13}{3\cancel{6}} \cdot \frac{\cancel{4}}{7} = \frac{26}{21} = \boxed{1\frac{5}{21}}$
- 4. Simplify the answer and/or change improper fraction answers to mixed numbers.

Dividing Fractions & Mixed Numbers

1. Turn any mixed numbers and whole numbers into improper fractions.

ex:
$$7 \div 1\frac{3}{4}$$

2. Keep the first fraction the same, change the division to multiplication, and flip the second fraction to its reciprocal.

- 3. Multiply the fractions.
- 4. Simplify the answer and/or change improper fraction answers to mixed numbers.

Evaluate each expression.

Evaluate each expression.				
15. $\frac{4}{5} + \frac{3}{4}$	16. 4 $\frac{2}{7}$ + 2 $\frac{9}{14}$	17. 8 11 + 9 5 18		
18. $6 - \frac{3}{8}$	19. $8\frac{3}{5} - 2\frac{1}{3}$	20. $4\frac{1}{6} - \frac{8}{9}$		
21. 4 · 15 16	22. 2 ³ / ₄ * 8	23. 6 \frac{5}{8} = 3 \frac{1}{2}		
24. $\frac{7}{9} \div \frac{2}{3}$	25. 4/5 ÷ 10	$26.5\frac{2}{3} \div 2\frac{5}{6}$		

Solve each word problem, showing all work.

27.	Jaimie ran $3\frac{1}{2}$ miles on Monday. She ran half as far on Tuesday as she did on Monday. How far did Jaimie run in all on Monday and Tuesday?
	27.

28. A $5\frac{1}{2}$ quart pot is filled $\frac{2}{3}$ of the way with water. How many more quarts of water can the pot hold?

Ratios

Ratios are comparisons of two quantities. There are 3 different ways to write ratios:

- Colon (A:B)

- Word Form (A to B)

- Fraction $\left(\frac{A}{B}\right)$

ex: write the ratio of triangles to circles in 3 ways: $\triangle \triangle \triangle \triangle \bigcirc \bigcirc$

$$\frac{4}{2} = \boxed{\frac{2}{1}, 2:1, 2 \text{ to } 1}$$

Ratios can be simplified just like fractions.

Rates & Unit Rates

Rates are ratios that compare quantities measured in different units. A unit rate is a rate with a denominator of 1.

To convert a rate to a unit rate:

- 1. Divide the numerator by the denominator
- 2. Either write your answer as a fraction with a label for the both the numerator and denominator OR as one number labeled with the first unit "per" the second unit

ex: express as a unit rate: 125 miles in 4 hours

$$\frac{125 \text{ mi}}{4 \text{ hr}}$$
 $125 \div 4 = 31.25$

31.25 mi or 31.25 miles per hr

Fractions, Decimals, & Percent

To convert a:

- Decimal to Percent: move the decimal point 2 places to the right

- Percent to Decimal: move the decimal point 2 places to the left

- Decimal to Fraction: write the decimal over the place value of the last digit and then simplify

- Fraction to Decimal: divide the numerator by the denominator

- Percent to Fraction: write the percent over 100 and then simplify

- Fraction to Percent: convert the fraction to a decimal and then convert the decimal to a percent

ex:
$$0.345 = 34.5\%$$

ex:
$$0.008 = \frac{8}{1000} = \boxed{\frac{1}{125}}$$

ex:
$$\frac{1}{5} = 5$$
) 1.0

ex:
$$45\% = \frac{45}{100} = \boxed{\frac{q}{20}}$$

ex:
$$\frac{3}{10} = 0.3 = 30\%$$

Percent of a Number

- 1. Turn the percent to a fraction or decimal.
- 2. Multiply the fraction/decimal by the number.

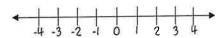
ex: Find 18% of 40

$$0.18 \cdot 40 = 7.2$$

Write each ratio in 3 ways.	Hints use the char	+ on the prev	vious page to help!	
29. A bank contains 15 pennies and the ratio of nickels to pennies.	l 12 nickels. Write	30. A bowl contains 6 apples and some bananas. If there are a total of 10 pieces of fruit, find the ratio of apples to bananas.		
Convert each rate to a unit ra	te.			
31. \$4.25 for 64 fluid ounces	32. 297 miles on 11 g	allons of gas	33. 124 feet in 10 seconds	
Complete the chart by convert	ing each number to	o a percent, fr	raction, and/or decimal.	
Fraction	De	eimal	Percent	
$\frac{3}{8}$				
35.	c).45		
36.			72%	
37.		0.1		
38. $\frac{3}{200}$				
Find each percent of a numbe	r.			
39. 30% of 90	40. 15% of 38	- 25	41. 50% of 86	
42. 75% of 160	43. 24% of 35	e	44. 2% of 74	

Comparing Integers

Integers are numbers without fractional parts. They can be positive, negative, or zero. The further right a number is on the number line, the greater it is.

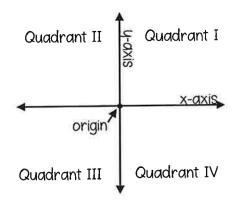


The absolute value of a number is the distance the number is from zero.

ex: compare with <, >, or =

-7
$$\left| -9 \right| \leftarrow$$
 The absolute value of -9 = 9

The Coordinate Plane

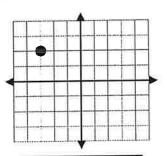


Ordered Pair: (x, y)

To graph a point on the coordinate plane, start at the origin. The first number in the ordered pair (the x-coordinate) tells you how far left (if negative) or right (if positive) to move. The second number (the y-coordinate) tells you how far up (if positive) or down (if negative) to move.

ex: Graph the point (-3, 2) and state the quadrant in which it is located.

Start at the origin, and move LEFT 3 and UP 2

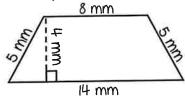


Quadrant II

Perimeter, Area and Volume

- Perimeter of Any Polygon: add all side lengths
- Area of a Rectangle: A = lw
- Area of Parallelogram: A = bh
- Area of Triangle: $A = \frac{1}{2}bh$
- Area of Trapezoid: $A = \frac{1}{2}h(b_1 + b_2)$
 - Volume of Rectangular Prism: V = lwh

ex: Find the perimeter \mathcal{E} area:



Perimeter: P = 5 + 8 + 5 + 14 = 32 mm

Area: This is a trapezoid, so use the area of a trapezoid

formula:
$$A = \frac{1}{2}h(b_1 + b_2)$$

The bases are the sides that are parallel, and the height is perpendicular to the bases.

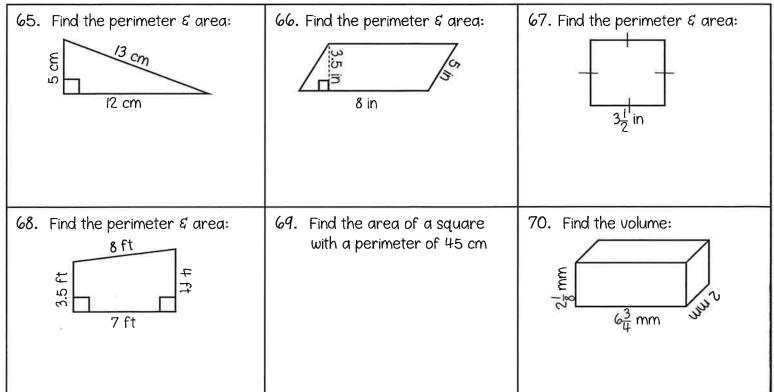
$$\rightarrow$$
 A = $\frac{1}{2}$ (4)(8+14) = 44 mm²

00:11pon 0 1110 111105	90.0 0	-6-5 -9-3 -2 -1 5 1 2 3 4 5 6		
454 🔾 -5	46. 2 -2	47. -5 5	487 () 6	4913 🔾 -9
50. -7 \(\) -6	5117)-14	52. -3 -2	53. 0 -6	54. -4

Graph and label each of the ordered pairs in the coordinate plane. Then state the quadrant or axis in/on which the point is located.

55. A(2, 4)	56. B(0, -3)	
57. C(1, -1)	58. D(3, 3)	
59. E(-4, I)	60. F(2,0)	
61. 6(-3, -2)	62. H(-2, 3)	
63. I(0, 2)	64. J(-1, -4)	- B

Find the perimeter, area, and/or volume of the given figure.



Evaluating Algebraic Expressions

1. Substitute the given numbers for the variables

2. Evaluate the expression using the order of operations

ex: evaluate x + 4y for $x = 4 \ \xi \ y = 6$

One-Step Addition & Subtraction Equations

- Addition Equations: Subtract the number being added to the

variable from both sides of the equation

$$ex: 4 + x = 18$$

 $x = 14$

- Subtraction Equations: Add the number being subtracted from

the variable to both sides of the equation

ex: 20 = a - 5+5 +5 $= a \rightarrow a = 25$

One-Step Multiplication & Division Equations

- Multiplication Equations: Divide both sides of the equation by

the number next to the variable

$$ex: \frac{7b}{7} = \frac{28}{7}$$

$$b = 4$$

- Division Equations: Multiply both sides of the equation by

the number under the variable

ex:
$$5 \cdot \frac{n}{5} = 10 \cdot 5$$

Problem Solving

- I. Read the problem. Identify the question that is being asked and the key information in the problem.
- 2. Plan how you are going to solve the problem and estimate the answer.
- 3. Solve the problem using the strategy of your choice.
- 4. Check your answer. Make sure your answer is reasonable and compare it to your estimate. Label your answer with appropriate units.

71. 2b – a	Ssion for $a = 5$, $b = 12$, $c = 10$, $\varepsilon d = 2$. 72. $d(ab - c)$	73. $3 + \frac{b}{d}$
		7 3. 3 d
74. 4a b+ 4d	75. $2a^2 - c$	76. b-c+d
	ex: $2(5)^2 - 10$	
	يد يوور	
	= 2(25)-10	
	- 50 - 10 = 40	

Solve each one-step equation.

78. $r - 6 = 7$	79. 6b = 18	80. $\frac{h}{q} = 3$
82. 48 = 12b	83. a + 24 = 83	84. 17 + x = 23
86. 86.5 = f - 7.63	87. ⁿ / ₆ = 11	88. $\frac{3}{4}$ h = 12
	20.	4
	82. 48 = 12b	82. $48 = 12b$ 83. $a + 24 = 83$ 86. $86.5 = f - 7.63$ 87. $\frac{n}{6} = 11$

ocive even word problem using the method of	of your choice.
89. A fencing company charges \$22 per foot to install a wood fence. How much will it cost to install a wood fence around a rectangular pool area that 20 feet wide and 38 feet long?	James of the state
91. Jack can read 45 pages of his book in one and a half hours. At that rate, how long will it take him to read the entire 300-page book?	92. Brian ordered 3 large cheese pizzas and a salad. The salad cost \$4.95. If he spent a total of \$47.60 including the \$5 tip, how much did each pizza cost? (Assume there is no tax).
93. A cookie recipe calls for 3½ cups of flour. The recipe makes 3 dozen cookies. How much four is needed to make 144 cookies?	94. Ella has a box of chocolate candies. She gives $\frac{1}{3}$ of the candies to her sister, 4 to her brother, and she eats the remaining 12 candies. How many chocolate candies were in the box originally?

Multiply.		
3 x 0 =	23	9 x 5 =
4 x 0 =	24	9 x 4 =
8 x 0 =	25	3 x 10 =
9 x 0 =	26	3 x 9 =
3 x 1 =	27	3 x 8 =
4 x 1 =	28	4 x 10 =
8 x 1 =	29	4 x 9 =
9 x 1 =	30	4 x 8 =
3 x 2 =	31	9 x 10 =
3 x 3 =	32	9 x 9 =
$4 \times 2 =$	33	9 x 8 =
4 x 3 =	34	8 x 10 =
9 x 2 =	35	8 x 9 =
9 x 3 =	36	8 x 8 =
8 x 2 =	37	3 x 6 =
8 x 3 =	38	4 x 7 =
4 x 5 =	39	8 x 6 =
4 x 4 =	40	9 x 7 =
3 x 5 =	41	3 x 7 =
3 x 4 =	42	4 x 6 =
8 x 5 =	43	8 x 7 =
8 x 4 =	44	9 x 6 =
	4 x 0 = 8 x 0 = 9 x 0 = 3 x 1 = 4 x 1 = 8 x 1 = 9 x 1 = 3 x 2 = 3 x 3 = 4 x 2 = 4 x 3 = 9 x 2 = 9 x 3 = 8 x 2 = 8 x 3 = 4 x 5 = 4 x 4 = 3 x 5 = 3 x 4 = 8 x 5 =	3 x 0 = 23 4 x 0 = 24 8 x 0 = 25 9 x 0 = 26 3 x 1 = 27 4 x 1 = 28 8 x 1 = 29 9 x 1 = 30 3 x 2 = 31 3 x 3 = 32 4 x 2 = 33 4 x 3 = 34 9 x 2 = 35 9 x 3 = 36 8 x 2 = 37 8 x 3 = 38 4 x 5 = 39 4 x 4 = 40 3 x 5 = 41 3 x 4 = 42 8 x 5 = 43

Solve for k.

	Solve for k.				
1	$2 \div 2 = k$	k =	23	$15 \div 3 = k$	k =
2	$4 \div 2 = k$	k =	24	$30 \div 3 = k$	k =
3	$6 \div 2 = k$	k =	25	$k = 10 \div 2$	k =
4	$8 \div 2 = k$	k =	26	$k = 25 \div 5$	k =
5	$20 \div 2 = k$	k =	27	$16 \div 4 = k$	k =
6	$k = 20 \div 10$	k =	28	$12 \div 3 = k$	k =
7	$5 \div 5 = k$	k =	29	$k = 14 \div 2$	k =
8	$10 \div 5 = k$	k =	30	$k = 18 \div 2$	k =
9	15 ÷ 5 = k	k =	31	$12 \div 2 = k$	k =
10	$20 \div 5 = k$	k =	32	$16 \div 2 = k$	k =
11	$50 \div 5 = k$	k =	33	$35 \div 5 = k$	k =
12	$k = 50 \div 10$	k =	34	$k = 18 \div 3$	k =
13	$4 \div 4 = k$	k =	35	$24 \div 3 = k$	k =
14	$8 \div 4 = k$	k =	36	$k = 45 \div 5$	k =
15	$12 \div 4 = k$	k =	37	$24 \div 4 = k$	k =
16	$20 \div 4 = k$	k =	38	$k = 32 \div 4$	k =
17	$40 \div 4 = k$	k =	39	$40 \div 5 = k$	k =
18	k = 40 ÷ 10	k =	40	$k = 21 \div 3$	k =
19	$30 \div 10 = k$	k =	41	$27 \div 3 = k$	k =
20	$3 \div 3 = k$	k =	42	$k = 30 \div 5$	k =
21	$6 \div 3 = k$	k =	43	$28 \div 4 = k$	k =
22	9 ÷ 3 = k	k =	44	$k = 36 \div 4$	k =
	L				

Solve each equation.

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1)
$$5+x=3$$

2)
$$5+n=10$$

3)
$$x+9=4$$

4)
$$m-10=-15$$

5)
$$p-4=1$$

6)
$$n+3=-6$$

7)
$$10 + x = 12$$

8)
$$r-3=-12$$

9)
$$x-9=0$$

10)
$$n+2=1$$

11)
$$v+7=5$$

12)
$$x-7=-1$$

13)
$$a + 8 = 17$$

14)
$$x-8=-12$$

Solving One-Step Equations 1

You must show your work to get credit!! Check your answer.

Adding and Subtracting

1)
$$y+6=20$$

2)
$$x-10=12$$

3)
$$12+z=15$$

4)
$$2+n=16$$

5)
$$a+4=14$$

6)
$$m-5=-10$$

7)
$$4+b=30$$

8)
$$10+c=25$$

9)
$$x-60=20$$

10)
$$g-16=4$$

11)
$$x-15=-20$$

12)
$$w+14=10$$

13)
$$r-18=27$$

14)
$$13+k=25$$

15)
$$f - 16 = 34$$

16)
$$j+17=19$$

17)
$$r-16=5$$

18)
$$9+t=56$$

Multiplying and Dividing

19)
$$2x = 16$$

20)
$$15 = 3t$$

21)
$$\frac{k}{2} = 6$$

$$e_{x}: 2_{x} = 16$$

 $e_{x}: 2_{x} = 16$
 $e_{x}: 2_{x} = 16$

22)
$$3h=27$$

23)
$$\frac{j}{3} = 4$$

24)
$$6p = 30$$

25)
$$\frac{n}{10}$$
 = 40

26)
$$\frac{h}{4} = 15$$

27)
$$9s = 81$$

28)
$$14 = 2c$$

30)
$$6 = \frac{m}{3}$$

31)
$$7 = \frac{p}{5}$$

32)
$$4w = 16$$

33)
$$\frac{f}{3} = 9$$

34)
$$20 = 4x$$

35)
$$3z = 36$$

36)
$$10 = \frac{j}{6}$$

A

Correct:

Multiply.

	Multiply.		
1	5 x 0 =	23	5 x 6 =
2	8 x 0 =	24	5 x 7 =
3	9 x 0 =	25	9 x 5 =
4	5 x 1 =	26	9 x 6 =
5	8 x 1 =	27	9 x 7 =
6	9 x 1 =	28	8 x 5 =
7	5 x 1 =	29	8 x 6 =
8	5 x 2 =	30	8 x 7 =
9	5 x 3 =	31	5 x 10 =
10	. 8 x 1 =	32	5 x 9 =
11	8 x 2 =	33	5 x 8 =
12	8 x 3 =	34	8 x 10 =
13	9 x 1 =	35	8 x 9 =
14	9 x 2 =	36	8 x 8 =
15	9 x 3 =	37	9 x 10 =
16	5 x 5 =	38	9 x 9 =
17	5 x 4 =	39	9 x 8 =
18	8 x 5 =	40	5 x 8 =
19	8 x 4 =	41	8 x 9 =
20	9 x 5 =	42	9 x 7 =
21	9 x 4 =	43	8 x 8 =
22	5 x 5 =	44	9 x 9 =

Name: _____

Date _____

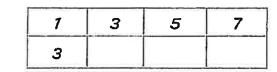
Topic: Ratio Tables - Worksheet 1

Complete the ratio tables

/ ×	7	1	
1	4	6	10
5	20	30	50
	1 5	1 4 5 20	

_			18	
2	9	18	27	36

	(<u></u>	T
3	5		15	
	6	12	- Level	24



_		2	3	4
5	18			12

<i>-</i>	3		9	12
6	7	14		

- 988	10		30	40
/	5	10		

	6		18	
8	7	14		28

<u> </u>	6	12	18	24
9	± 4			

	1	4	5	9
70	2			

Name_

Class

Date

Lesson 4 Martin Vive has 2-Divid Marting

with He Regressing

Find each product.



52 × 11 204× 12

31 × 12

222 × 32 52 × 4

① 12 × 21

103 × 13

33 × 11

11 × 42

213 × 23

① 14 × 212

Lesson 5 Multiplying by a 2-Digit Number with Regrouping

Find each product. Regroup as needed.

34 × 18 64 × 55 187 × 28

541 × 32

84 × 17 311 × 75

28 × 45

(i) 159 × 63

84 × 27

() 630 × 15

 \bigcirc 475 \times 38

33 × 94

Division: 3-Digit Dividends; 3-Digit Quotients

steps:

ex

Graph Paper Division

b.

Decimal Division

ex

a.
$$245.3 \div 5 =$$

b. 4.08 ÷ 2 =

d. 133.2 ÷ 6 =

g. 757.6 ÷ 8 =

h.
$$0.049 \div 7 =$$

Multiply.

Muliply.		
3 x 0 =	23	8 x 5 =
4 x 0 =	24	8 x 4 =
7 x 0 =	25	3 x 10 =
8 x 0 =	26	3 x 9 =
3 x 1 =	27	3 x 8 =
4 x 1 =	28	4 x 10 =
7 x 1 =	29	4 x 9 =
8 x 1 =	30	4 x 8 =
$3 \times 2 =$	31	8 x 10 =
3 x 3 =	32	8 x 9 =
4 x 2 =	33	8 x 8 =
4 x 3 =	34	7 x 10 =
8 x 2 =	35	7 x 9 =
8 x 3 =	36	7 x 8 =
7 x 2 =	37	3 x 6 =
7 x 3 =	38	4 x 7 =
4 x 5 =	39	7 x 6 =
4 x 4 =	40	8 x 7 =
3 x 5 =	41	3 x 7 =
3 x 4 =	42	4 x 6 =
7 x 5 =	43	7 x 7 =
7 x 4 =	44	8 x 6 =
	3 x 0 = 4 x 0 = 7 x 0 = 8 x 0 = 3 x 1 = 4 x 1 = 7 x 1 = 8 x 1 = 3 x 2 = 3 x 3 = 4 x 2 = 4 x 3 = 8 x 2 = 8 x 3 = 7 x 2 = 7 x 3 = 4 x 5 = 4 x 4 = 3 x 5 = 3 x 4 = 7 x 5 =	3 x 0 = 23 4 x 0 = 24 7 x 0 = 25 8 x 0 = 26 3 x 1 = 27 4 x 1 = 28 7 x 1 = 29 8 x 1 = 30 3 x 2 = 31 3 x 3 = 32 4 x 2 = 33 4 x 3 = 34 8 x 2 = 35 8 x 3 = 36 7 x 2 = 37 7 x 3 = 38 4 x 4 = 40 3 x 5 = 41 3 x 4 = 42 7 x 5 = 43