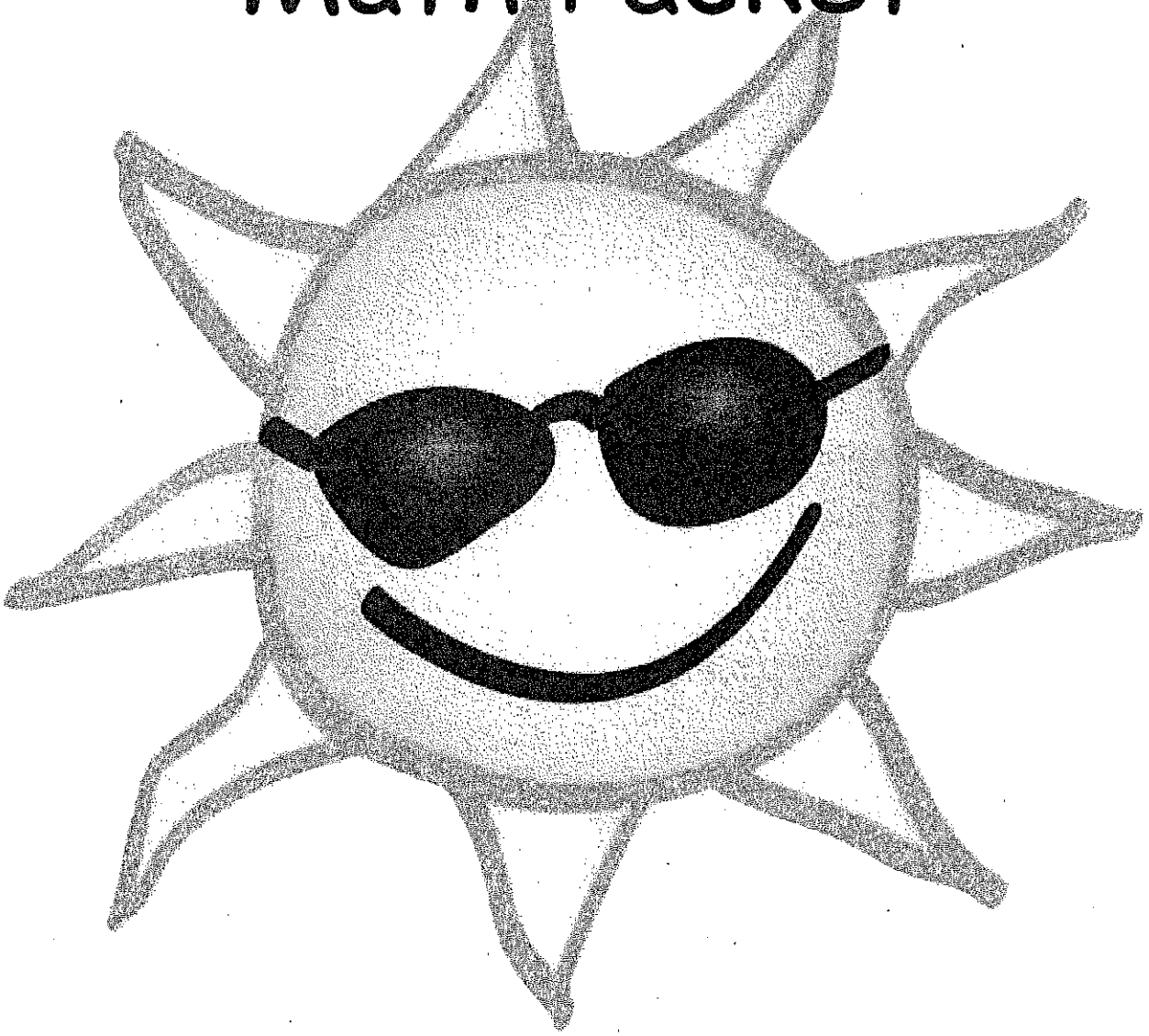
Summer

Math Packet



For students entering:

Math 7

Name: _____

Directions

Complete this packet to help you review what you learned in 6th grade so you are ready to start the year strong in 7th grade!

Be sure to show ALL your work on your paper.

Use the QR codes below if you need additional instruction on a topic.

There is a link to the answer key for you to CHECK your answers. Credit will not be given if there is no work to support your answers, so DON'T just COPY the answers!!!!

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ANSWER KEY 

Operation with Decimals: Simplify. Re-write each problem and show your work. Do NOT use a calculator!

1.) $5.038+2.96$

2.) $16+1.6+0.517$

3.) $27-10.4$

4.) $9.006-4.44$

5.) $4.8 \cdot 6.9$

6.) $0.05 \cdot 0.7$

7.) $17.03 \div 9$

8.) $4.82 \div 45$

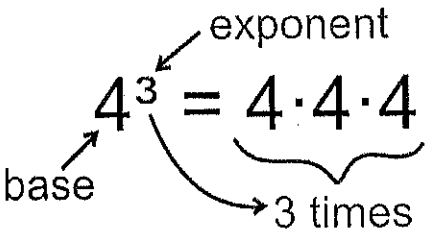
9.) $3.25 \div 0.5$

10.) $23.24 \div 2.8$

Operations with Fractions: Simplify. Write your answer in lowest terms. Do NOT use a calculator!

1.) $\frac{3}{8}+\frac{1}{4}$	2.) $6\frac{1}{2}+3\frac{1}{9}$	3.) $5\frac{1}{3}-2\frac{1}{4}$
4.) $6+3\frac{3}{8}$	5.) $2\frac{1}{6}+2\frac{7}{8}$	6.) $7\frac{1}{8}-2\frac{3}{4}$
7.) $20-8\frac{3}{4}$	8.) $\frac{5}{9}\div\frac{1}{3}$	9.) $\frac{11}{12}\cdot 3$
10.) $\frac{5}{16}\cdot\frac{4}{5}$	11.) $5\frac{1}{2}\cdot 4\frac{3}{4}$	12.) $3\cdot 5\frac{2}{3}$
13.) $5\div\frac{2}{5}$	14.) $9\frac{1}{4}\div 2\frac{1}{4}$	

Exponents: Follow the directions for each section.



Write each exponent in *expanded form.*

Example: $5^3 = 5 \cdot 5 \cdot 5$

1.) $4^8 =$

2.) $3^5 =$

3.) $6^6 =$

*challenge 4.) $x^4 =$

Write each in *exponential form.*

Example: $3 \cdot 3 \cdot 3 \cdot 3 = 3^4$

5.) $7 \cdot 7 \cdot 7 =$

6.) $3 \cdot 3 \cdot 8 \cdot 8 \cdot 8 \cdot 8 =$

*challenge 7.) $x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y =$

8.) $9 \cdot 9 \cdot 9 \cdot 9 =$

Evaluate. Show your work.

Example: $2^3 = 2 \cdot 2 \cdot 2 = 8$

9.) $5^3 =$

10.) $3^4 =$

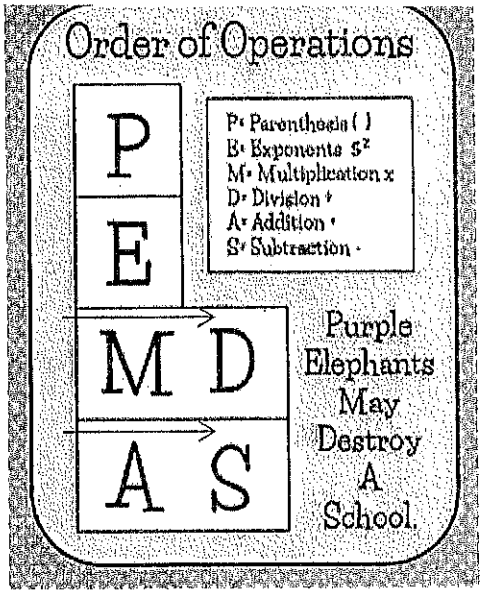
11.) $6^3 =$

12.) $9^2 =$

13.) $13^2 =$

*challenge 14.) $4^2 \cdot 3^3 =$

Order of Operations: Simplify. Show your work and box your answer.



Example:

$$13^2 - 2 \cdot 5 + (12 \div 2^2)$$
$$169 - 2 \cdot 5 + (12 \div 4)$$
$$169 - 2 \cdot 5 + \quad 3$$
$$169 - \ 10 \ + \quad 3$$
$$159 \quad + \quad 3$$
$$\boxed{162}$$

1.) $[36 \div (3 \cdot 4)] + 2$

2.) $60 - 7(5 + 6 \div 2) + 2^4$

3.) $4 + 6(5 - 2)$

4.) $2 + 8 \cdot 3^2$

5.) $24 - 6 \cdot 2$

6.) $4 \cdot 9 + 7 \cdot 8$

7.) $102 - 2^4(3^4 - 51)$

8.) $14 + 8 \div 2 - 1$

9.) $\dfrac{63 - 8}{3 + 8} - 2$

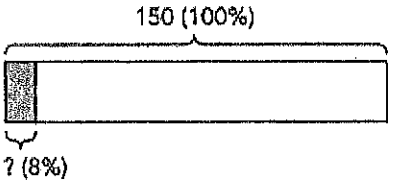
10.) $5 \cdot \dfrac{19 - 7}{5 + 1}$

Percent of a Quantity: Solve each problem. Show your work!

Example

What is 8% of 150?

Method 1



The model shows that:

100% → 150

1% → $\frac{150}{100} = 1.5$

8% → $8 \times 1.5 = 12$

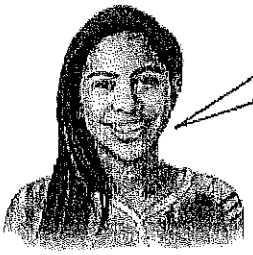
8% of 150 is 12.

Method 2

8% of 150 = $\frac{8}{100} \times 150$

$= 12$

8% of 150 is 12.



"of" means "×". In this case, 8% of 150 is the same as 8% × 150.

1.) 35% of 900

Method 1

2.) 115% of $360

Method 1

3.) 82% of 450

Method 2

4.) 170% of 2,100 ft

Method 2

Choose the method you like best to complete the following problems.

5.) 35% of 125 miles

6.) 46% of 340 gallons

7.) 65% of 180 pounds.

8.) 75% of 72 hours

9.) 120% of $590

10.) 245% of 860 kilograms

Writing Algebraic Expressions:

Use the key words to write an algebraic expression. Simplify if possible.

1.) One-eighth of m.

_____

2.) The product of x and 7.

_____

3.) Subtract 2 from x.

_____

4.) The sum of m and n.

_____

5.) Subtract the product of 5 and x from 7.

_____

6.) Divide y by the sum of 9 and x.

_____

7.) Subtract the cube of y from 15.

_____

8.) 4 times the sum of 10 and x.

_____

9.) 13 less than 5 divided by p.

_____

10.) 5 more than the product of 3 and c.

_____

11.) 12 less than 3 times a number y.

_____

12.) 6 less than the sum of 5 and y.

_____

13.) one-third of the product of 5p and 3.

_____

14.) the product of 5x and 7 divided by 13.

_____

Words and Phrases to Math Symbols

Addition

Plus
And
Total of
Altogether Increased By
Combined Add Sum
Together More Than
Added To
In All
Make

Subtraction

Subtract Gave Take Away
Decrease By Fewer Minus
Shared Fewer Than Less Than
Difference Less

Multiplication

Times Triple
Double Product
Multiplied By
OF
Increased By a Factor
Twice Multiple

Division

Quotient of Per Ratio of
Divided By Half Divisor
Divided Into Percent Split Up

Equals

Is Are Were Was

Will Be Yields Sold For

Parenthesis Words

The Quantity of
Twice the sum of
Times the sum of
Times the difference of
Plus the difference of

Simplifying Algebraic Expressions: Simplify each expression by combining like terms. Box the algebraic terms and circle the numeric terms in each expression.

Example: $8 + 3j - 5 - 2j + 8j$

$8 - 5 + 3j - 2j + 8j$

Regroup like terms

$3 + j + 8j$

Add numeric terms; combine algebraic terms

$3 + 9j$

1.) $12c - 3c - 3c$

2.) $5j + 2j + 9j$

3.) $9k + 3k - 2k$

4.) $8y - 5y + 2y$

5.) $5t + 4 + 2t$

6.) $6m - 10 - 2m - m$

7.) $7r + 5r - 12$

8.) $20 + 5u + 10u - 20 - 14u$

9.) $20 + 12k - 7k - 8$

10.) $6x + 15 + 9x - 10x - 8$

Expanding Algebraic Expressions: Expand each expression. Show your work!

Example: $4(5a+7)$

$= 4 \bullet 5a + 4 \bullet 7$ *Multiply each term inside the parentheses by 4.*

$= 20a + 28$

1.) $3(p+9)$	2.) $7(4x+2)$
3.) $10(3-2x)$	4.) $9(2x-9)$
5.) $6(3-4d)$	6.) $2(12+5y)$
7.) $4(3g+5)$	8.) $8(11-6a)$
9.) $7(4x+5y)$	10.) $3(8m-3n)$
11.) $3(2a+6b+3c)$	12.) $5(7x+8y-3z)$

Factoring Algebraic Expressions: Factor each expression by taking out the GCF. Show your work!

Example: $56x-7$

$=7\cdot 8x-7\cdot 1$ *The GCF of 56 and 7 is 7.*

$=7(8x-1)$

1.) $3-24t$	2.) $6a+24$
3.) $5y+20$	4.) $6+42h$
5.) $3b-21$	6.) $3x+15y$
7.) $15w-5$	8.) $4n-28$
9.) $8+8a$	10.) $16g-24h$
11.) $5a+20b+35c$	12.) $15x-12y+36z$

One-Step Equations: Solve. Show your work! Box your answer.

1.) $x-8=15$

2.) $x+15=6$

3.) $5x=6$

4.) $\frac{x}{8}=6$

5.) $x-8=12$

6.) $6+x=15$

7.) $1.3x=2.6$

8.) $\frac{x}{9}=12$

9.) $\frac{2}{3}x=18$

10.) $\frac{5}{6}x=10$

Name : _____ Score : _____

Identifying Ordered Pairs

A) Write the point that is located at each ordered pair.

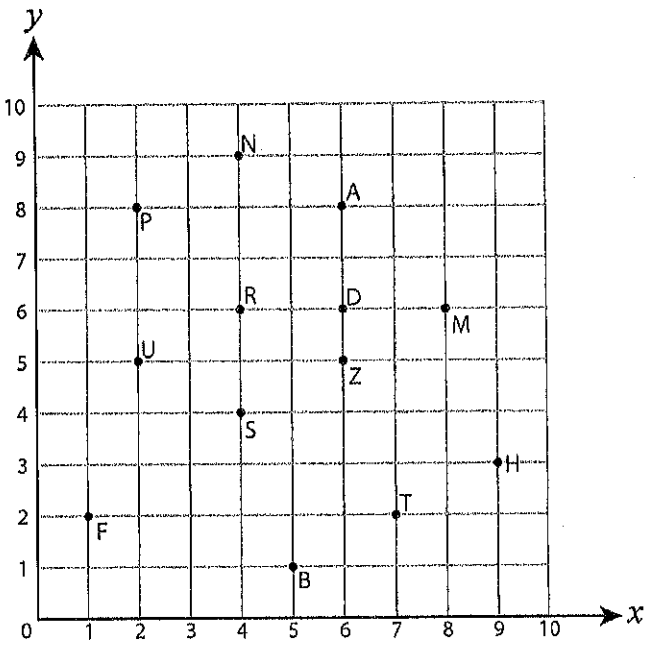
1) (2, 5) _____ 2) (4, 6) _____

3) (9, 3) _____ 4) (7, 2) _____

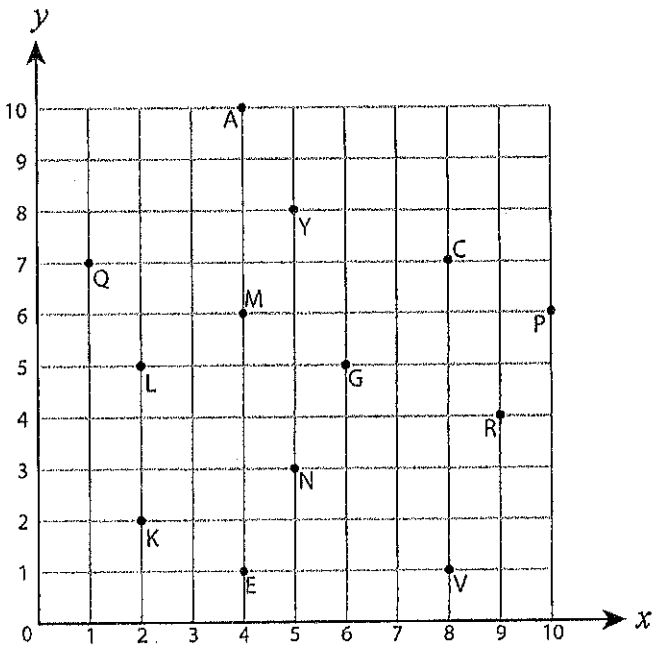
5) (6, 6) _____ 6) (8, 6) _____

7) (4, 9) _____ 8) (4, 4) _____

9) (5, 1) _____ 10) (1, 2) _____



B) Write the ordered pair for each point.



11) G (___ , ___) 12) V (___ , ___)

13) R (___ , ___) 14) C (___ , ___)

15) E (___ , ___) 16) L (___ , ___)

17) Q (___ , ___) 18) A (___ , ___)

19) Y (___ , ___) 20) K (___ , ___)

Name : _____ Score : _____

Teacher : _____ Date : _____

Ratios and Rates

Express each ratio as a fraction in the simplest form.

1) 14 quarts to 581 quarts _____

2) 3 miles out of 6 miles _____

3) 42 pennies to 48 pennies _____

4) 10 blue cars out of 55 cars _____

5) 9 cups to 33 cups _____

6) 70 dimes to 84 dimes _____

7) 28 gallons to 77 gallons _____

8) 28 beetles out of 44 insects _____

Express each phrase as a rate and unit rate.
(Round your answer to the nearest hundredth.)

	Rate	Unit Rate
9) 11 inches of snow in 5 hours		
10) 7 chocolate bars cost 18 dollars		
11) 7 pencils for 13 dollars		
12) 4 calculators cost $135.00		
13) 13 dollars for 7 books		
14) 125 miles on 9 gallons of gas		
15) 8 batteries cost 25 dollars		
16) 8 dollars for 3 cans of tuna		

Name : _____ Score : _____

Teacher : _____ Date : _____

Word Problems

1) You can buy 3 apples at the Quick Market for $1.20. You can buy 5 of the same apples at Stop and Save for $2.50. Which place is the better buy? _____

2) The bakers at Healthy Bakery can make 200 bagels in 5 hours. How many bagels can they bake in 24 hours? What was that rate per hour? _____

3) An ice cream factory makes 230 quarts of ice cream in 5 hours. How many quarts could be made in 12 hours? What was that rate per day? _____

4) Gas mileage is the number of miles you can drive on a a gallon of gasoline. A test of a new car results in 410 miles on 20 gallons of gas. How far could you drive on 65 gallons of gas? What is the car's gas mileage? _____

5) A ferris wheel can accommodate 70 people in 30 minutes. How many people could ride the ferris wheel in 3 hours? What was that rate per hour? _____

6) You can buy 5 cans for green beans at the Village Market for $2.40. You can buy 10 of the same cans of beans at Sam's Club for $4.10. Which place is the better buy? _____

7) A jet travels 600 miles in 2 hours. At this rate, how far could the jet fly in 15 hours? What is the rate of speed of the jet? _____