

Welcome to Math 8.

This summer packet must be completed by the first day of school. It reviews fraction and decimal skills, integers, order of operations, some geometry, and algebra skills; all skills essential to be successful in Math 8. To receive credit, all of your work must be shown. If you are working with fractions, your answer should be in fraction form, decimal expressions should have answers in decimal form, steps must be included in the order of operations problems, formulas in the geometry problems, and all work on the word problems. Do not expect to complete this packet in one sitting. Work on it for 15-20 minutes at a time, several days each week.

The first grade you will receive next year will be the grade of a test you will be given the first week of school that will assess your knowledge of these skills.

If you have any questions, please email one of us over the summer.

Have a wonderful break!!!

Mrs. Bunting and Mrs. Race

Find a low and high estimate for the product or quotient.

9.) 823×26

10.) 4897×872

11.) $7231 \div 82$

12.) $5461 \div 64$

II. DECIMALS

Comparing and Ordering Decimals

13.) Order the numbers 0.2, 0.25, 0.02, and 0.252 from least to greatest.

Perform the indicated operation.

14.) $5.6 + 9.2$

15.) $12.87 + 4.58$

16.) $5.1 - 2.67$

17.) $4.21 - 3.78$

$$18.) 0.86 \times 0.3$$

$$19.) 61.95 \div 3.5$$

$$20.) 455.7 \div 9.8$$

$$21.) 0.04 \times 9.8$$

III. FRACTIONS

Write the mixed number as an improper fraction.

$$22.) 4\frac{1}{8}$$

$$23.) 5\frac{4}{9}$$

Write the improper fraction as a mixed number.

$$24.) \frac{23}{3}$$

$$25.) \frac{61}{7}$$

Perform the indicated operation. Give your final answer as a proper fraction or mixed number in simplified form.

$$26.) \frac{2}{5} + \frac{1}{5}$$

$$27.) \frac{5}{9} + \frac{2}{3}$$

$$28.) \frac{3}{7} + \frac{1}{5}$$

$$29.) \frac{14}{15} - \frac{1}{5}$$

$$30.) 4 - \frac{2}{7}$$

$$31.) 4\frac{3}{10} - 2\frac{4}{5}$$

$$32.) \frac{3}{7} \times \frac{1}{5}$$

$$33.) 8 \times \frac{5}{16}$$

$$34.) 2\frac{7}{9} \times 5\frac{2}{5}$$

$$35.) \frac{3}{10} \div 2$$

$$36.) 10 \div \frac{5}{6}$$

$$37.) 9\frac{3}{4} \div 4\frac{7}{8}$$

IV. GEOMETRY AND MEASUREMENT

Complete the following statements.

$$38.) 15 \text{ yds} = \underline{\quad ? \quad} \text{ft}$$

$$39.) 25 \text{ kg} = \underline{\quad ? \quad} \text{g}$$

$$40.) 32 \text{ oz} = \underline{\quad ? \quad} \text{lbs}$$

$$41.) 280 \text{ cm} = \underline{\quad ? \quad} \text{m}$$

Answer the following questions.

42.) What is the perimeter of a rectangle with a length of 7 inches and a width of 4 inches?

43.) What is the area of a square with a side of 9 feet?

44.) What is the volume of a cube with an edge of 15 cm?

V. ORDER OF OPERATIONS

Evaluate the following expressions.

45.) $15 - 3 \times 4$

46.) $48 \div 6 + 2$

47.) $3 \times 8 + 5 \times 4$

48.) $17 - (3^2 - 2)$

49.) $4[15 - (2 + 5)]$

50.) $\frac{18 + 12}{7 - 2}$

Skill: Order of Operations With Integers

Investi

Accentuate the

Find the value of each expression.

1. $(8 + 2) \times 9$

2. $5 - 1 \div 4$

3. $(6 + 3) \div 18$

4. $80 - 6 \times 7$

5. $4 \times 6 + 3$

6. $4 \times (6 + 3)$

7. $35 - 6 \times 5$

8. $8 \div 3 + 6$

9. $(-4)^2 + 10 \cdot 2$

10. $-4^2 + 10 \cdot 2$

11. $(5 \cdot 3)^2 + 8$

12. $5 \cdot 3^2 + 8$

13. $9 + (7 - 4)^2$

14. $-9 + 7 - 4^2$

15. $(-6)^2 + 3^3 - 7$

16. $-6^2 + 3^3 - 7$

17. $2^3 + (8 - 5) \cdot 4 - 5^2$

18. $(2^3 + 8) - 5 \cdot 4 - 5^2$

19. $2^3 \cdot 3 - 5 \cdot 5^2 + 8$

20. $2^3 \cdot 3 - 5(5^2 + 8)$

Skill: Subtracting Integers

Accent

Find each difference.

1. $9 - 26$

2. $-4 - 15$

3. $21 - (-7)$

4. $27 - (-16)$

5. $-16 - (-43)$

6. $47 - 19$

7. $-156 - 98$

8. $-192 - 47$

9. $0 - (-51)$

10. $-63 - 89$

11. $-12 - (-21)$

12. $92 - (-16)$

13. $72 - 15$

14. $-86 - (-19)$

15. $17 - (-46)$

16. $-78 - (-53)$

17. $-19 - (-12)$

18. $-16 - (-21)$

Accentuate the Negative

Multiply.

- | | | |
|---------------------|------------------------|-----------------------|
| 1. 7×8 | 2. -5×7 | 3. $4 \times (-8)$ |
| 4. $-8 \times (-2)$ | 5. $11 \times (-6)$ | 6. -7×6 |
| 7. $-8 \times (-8)$ | 8. 10×4 | 9. 21×13 |
| 10. -15×12 | 11. $-25 \times (-14)$ | 12. $10 \times (-25)$ |

For Exercises 13–18, find the missing number.

- | | | |
|-----------------------------|--------------------------------|---------------------------------|
| 13. $3 \times \square = -6$ | 14. $4 \times \square = -4$ | 15. $\square \times (24) = -8$ |
| 16. $-3 \times \square = 9$ | 17. $-9 \times (-2) = \square$ | 18. $\square \times (-2) = -18$ |
19. Your teacher purchases 24 pastries for a class celebration, at \$2 each. What integer expresses the amount he paid?
20. Temperatures have been falling steadily at 5°F each day. What integer expresses the change in temperature in degrees $^{\circ}\text{F}$ 7 days from today?
21. A submarine starts at the surface of the Pacific Ocean and descends 60 feet every hour. What integer expresses the submarine's depth in feet after 6 hours?
22. A skydiver falls at approximately 10 meters per second. Write a number sentence to express how many meters he will fall in 40 seconds.

Simplify each expression.

1. $-2 + (-3)$

2. $8 - 7 + 4$

3. $8 + (-5)$

4. $15 + (-3)$

5. $-16 + 8$

6. $7 + (-10)$

7. $-9 + (-5)$

8. $-12 + 14$

9. $8 + 7$

10. $9 + (-4)$

11. $-6 + (-8)$

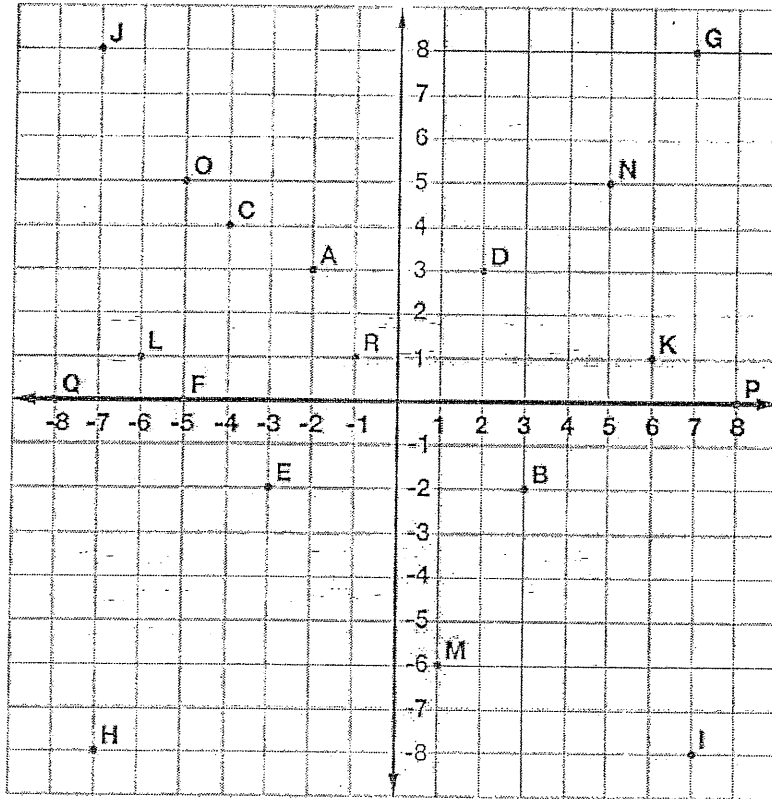
12. $8 + (-14)$

13. $9 + (-17)$

14. $-15 + (-11)$

15. $-23 + 18$

Ordered Pairs



Tell what point is located at each ordered pair.

- | | | |
|---------------------|--------------------|--------------------|
| 1. $(3, -2)$ _____ | 2. $(2, 3)$ _____ | 3. $(-5, 5)$ _____ |
| 4. $(-7, -8)$ _____ | 5. $(-4, 4)$ _____ | 6. $(-5, 0)$ _____ |

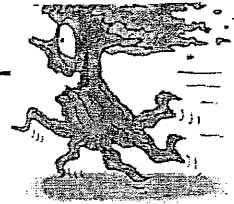
Write the ordered pair for each given point.

- | | | |
|-------------|-------------|-------------|
| 7. E _____ | 8. M _____ | 9. P _____ |
| 10. G _____ | 11. Q _____ | 12. N _____ |

Plot the following points on the coordinate grid.

- | | | |
|------------------|-----------------|----------------|
| 13. S $(-6, -3)$ | 14. T $(2, -4)$ | 15. U $(5, 8)$ |
|------------------|-----------------|----------------|

Basic Algebra Review



Evaluate each expression. Let $a = 24$. Let $b = 2$.

$34 - b$ _____ $\frac{a}{3}$ _____ $9b$ _____

$a + b$ _____ $2a$ _____ $\frac{24}{a}$ _____

Rewrite each phrase as an algebraic expression.

subtract 7 from c _____ 30 divided by d _____

the product of 5 and e _____ the sum of 8 and f _____

Determine the value of the variable in each equation.

$14 + g = 26$

$12h = 60$

$\frac{28}{l} = 4$

$g =$ _____

$h =$ _____

$l =$ _____

Determine the value of the unknown variable in each equation.

$11j = k$

$\frac{16}{m} = n$

$p + 7 = q$

$j =$ _____, $k = 110$

$m = 4$, $n =$ _____

$p =$ _____, $q = 19$

Complete the tables.

$\frac{40}{r} = s$					
r	2		5	8	
s		10			1

$13 - x = y$					
x			5	9	
y	0	11			1

Skill: Variables, Tables, and Graphs

Complete each table given the rule.

Rule: Output = Input \cdot 5

1.

Input	1	2	3	4	5
Output	5	10	15		

Rule: Output = Input \cdot 2

2.

Input	10	20	30	40	50
Output	20	40	60		

Rule: Output = Input + 3

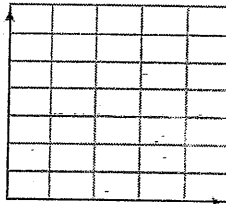
3.

Input	3	4	5	6	7
Output	6	7	8		

Graph the data in each table.

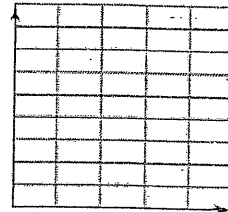
4. Hours | Wages

1	\$15
2	\$30
3	\$45
4	\$60

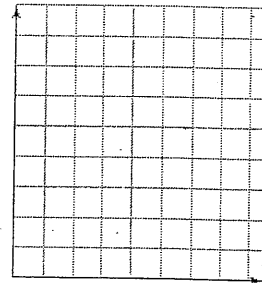


5. Gallons | Quarts

1	4
2	8
3	12
4	16



6. A parking garage charges \$3.50 per hour to park. The equation $c = 3.5h$ shows how the number of hours h relates to the parking charge c . Graph this relationship.



Use the expression to complete each table.

7.

x	$x + 7$
2	9
5	12
8	
11	
	21

8.

x	$5x$
3	
6	
9	
12	
	75

9.

x	$125 - x$
15	
30	
45	
60	
	50

10. A cellular phone company charges a \$49.99 monthly fee for 600 free minutes. Each additional minute costs \$0.35. This month you used 750 minutes. How much do you owe?

Write a rule for the relationship between the variables represented in each table.

11.

x	y
1	6
2	7
3	8
4	9

12.

x	y
1	4
2	8
3	12
4	16

13.

x	y
1	4
2	7
3	10
4	13

14. A typist types 45 words per minute.
- Write a rule to represent the relationship between the number of typed words and the time in which they are typed.
 - How many words can the typist type in 25 minutes? Write and solve an equation to answer this.

Skill: Finding and Using Rates (continued)

Investigation

Comparing and

15. a. Yolanda and Yoko ran in a 100-yd dash. When Yolanda crossed the finish line in 15 seconds, Yoko was 10 yards behind her. The girls then repeated the race, with Yolanda starting 10 yards behind the starting line. If each girl ran at the same rate as before, who won the race? By how many yards?
- b. Assume the girls run at the same rate as before. How far behind the starting line should Yolanda be in order for the two to finish in a tie?
16. During the breaststroke competitions of a recent Olympics, Nelson Diebel swam 100 meters in 62 seconds, and Mike Bowerman swam 200 meters in 130 seconds. Who swam at a faster rate?
17. During a vacation, the Vasquez family traveled 174 miles in 3 hours on Monday, and 290 miles in 5 hours on Tuesday. Write an equation relating miles m traveled to hours h .