

Mrs. Kavy's
Rising 7th Grade
AP Math
Summer
Assignment

Dear 6th Grade Parents and Students,

We all know that over the summer, mathematical skills are often weakened which may result in a setback at the beginning of the school year. To avoid the need to play "catch-up" in the fall, an assignment has been prepared to help the students maintain their skills.

This assignment is made-up of concepts that have been taught in 6th grade and will provide students a thorough review of skills needed for 7th grade. It is important that this packet be completed to the best of their ability. The objective of this assignment is to help them succeed in the next school year.

All questions must have worked to support the answers. Work can be done on the question paper, if workspace is available. If not, work should be completed on loose leaf and attached to question paper. Do not squeeze work into a tiny area. Any assignment without work will be considered an incomplete assignment. This packet along with any loose leaf used to show work should be stapled together and submitted on the first day of school.

Thank you for your cooperation.

Have a great summer!

Sincerely,

Mrs. Kavy

Exercise 4

Add or subtract the following fractions. Simplify and reduce when possible.

$$1) \frac{2}{7} + \frac{3}{7} =$$

$$2) \frac{9}{14} + \frac{1}{14} =$$

$$3) \frac{1}{6} + \frac{3}{6} =$$

$$4) \frac{3}{5} + \frac{1}{4} =$$

$$5) \frac{2}{3} + \frac{1}{2} =$$

$$6) \frac{4}{5} + \frac{1}{2} =$$

$$7) \frac{2}{4} + \frac{3}{6} =$$

$$8) \frac{5}{6} + \frac{3}{8} =$$

$$9) \frac{7}{9} + \frac{2}{3} =$$

$$10) \frac{3}{4} - \frac{1}{2} =$$

$$11) \frac{3}{5} - \frac{1}{3} =$$

$$12) \frac{7}{8} - \frac{2}{3} =$$

$$13) \frac{5}{12} - \frac{1}{4} =$$

$$14) \frac{9}{11} - \frac{1}{2} =$$

$$15) \frac{11}{12} - \frac{5}{6} =$$

Exercise 5

Add or subtract the following mixed numbers. Simplify and reduce when possible.

$$1) 8\frac{4}{5} + 8\frac{1}{10} =$$

$$2) 1\frac{2}{3} + \frac{3}{7} =$$

$$3) 16\frac{5}{8} + \frac{11}{12} =$$

$$4) 3\frac{4}{5} + 6\frac{2}{3} + 5\frac{11}{15} =$$

$$5) 1\frac{11}{12} - \frac{2}{3} =$$

$$6) 4\frac{1}{8} - 1 =$$

$$7) 5\frac{1}{6} - 2\frac{1}{3} =$$

$$8) 14\frac{1}{2} - 2\frac{1}{8} =$$

$$9) 7\frac{2}{5} + 1\frac{1}{5} =$$

$$10) 2\frac{2}{3} - \frac{1}{4} =$$

$$11) 12\frac{1}{7} - 8\frac{2}{3} =$$

$$12) 4\frac{4}{7} - 3\frac{6}{7} =$$

Exercise 1 (answers on page 40)

Multiply these fractions. Cancel and simplify if possible.

1. $\frac{1}{8} \times \frac{2}{3} =$

2. $\frac{1}{2} \times \frac{4}{5} =$

3. $\frac{3}{5} \times \frac{10}{11} =$

4. $\frac{8}{9} \times \frac{3}{4} =$

5. $\frac{7}{10} \times \frac{2}{21} =$

6. $\frac{3}{4} \times \frac{5}{7} =$

7. $\frac{5}{9} \times \frac{7}{8} =$

8. $6 \times \frac{1}{3} =$

9. $\frac{5}{9} \times 9 =$

10. $10 \times \frac{1}{2} =$

11. $\frac{1}{3} \times 12 =$

12. $\frac{15}{16} \times \frac{8}{10} =$

13. $\frac{7}{8} \times \frac{12}{13} =$

14. $\frac{6}{9} \times \frac{1}{3} =$

15. $\frac{5}{10} \times \frac{3}{4} =$

16. $\frac{16}{17} \times \frac{23}{24} =$

17. $\frac{5}{16} \times \frac{20}{30} =$

18. $\frac{9}{10} \times \frac{50}{100} =$

Multiplying Mixed Numbers

Change mixed numbers into improper fractions then multiply as before.

Ex. 1: $2\frac{1}{2} \times 3\frac{1}{3} = \frac{5}{2} \times \frac{10}{3} = \frac{25}{3} = 8\frac{1}{3}$

Change the mixed numbers to improper fractions by:

$2\frac{1}{2} = \frac{2 \times 2 + 1}{2} = \frac{4 + 1}{2} = \frac{5}{2}$

1) multiplying the bottom number by the whole number
2) add the top number
3) keep the bottom number.

Cancel top and bottom. Multiply. Improper fractions simplify by dividing.

Ex. 2: $4\frac{1}{4} \times 6 = \frac{17}{4} \times \frac{6}{1} = \frac{51}{2} = 25\frac{1}{2}$ Change the mixed number into an improper fraction. Change the whole number into an improper fraction. Cancel. Multiply. Simplify to get the quotient.

Exercise 2 (answers on page 40)

Multiply these fractions. Cancel and simplify if necessary.

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

2. $2\frac{1}{3} \times 5\frac{2}{5} =$

3. $4\frac{1}{3} \times 1\frac{7}{8} =$

4. $\frac{1}{2} \times 2\frac{1}{8} =$

5. $3\frac{1}{4} \times \frac{7}{8} =$

6. $5\frac{5}{7} \times \frac{14}{15} =$

7. $7 \times 1\frac{3}{8} =$

8. $2\frac{4}{5} \times 5 =$

9. $6\frac{2}{3} \times 9 =$

10. $1\frac{8}{9} \times 1\frac{5}{6} =$

11. $7\frac{1}{7} \times 8\frac{2}{5} =$

12. $1\frac{1}{7} \times 9\frac{1}{3} =$

Dividing Fractions

When dividing fractions, invert (turn over) the fraction to the right of the \div ("divide by") symbol. Cancel (if possible) then multiply.

$$\text{Ex. 1: } \frac{1}{2} \div \frac{3}{4} = \frac{1}{2} \times \frac{4}{3} = \frac{2}{3}$$

$$\text{Ex. 2: } \frac{3}{5} \div 5 = \frac{3}{5} \div \frac{5}{1} = \frac{3}{5} \times \frac{1}{5} = \frac{3}{25}$$

Exercise 3 (answers on page 40)

Divide these fractions. Cancel if necessary and simplify

$$1. \frac{2}{3} \div \frac{5}{6} =$$

$$2. \frac{9}{10} \div \frac{1}{2} =$$

$$3. \frac{3}{4} \div \frac{1}{4} =$$

$$4. \frac{9}{11} \div \frac{7}{22} =$$

$$5. \frac{2}{5} \div \frac{1}{6} =$$

$$6. \frac{1}{2} \div \frac{3}{4} =$$

$$7. \frac{7}{8} \div \frac{1}{4} =$$

$$8. \frac{1}{5} \div \frac{1}{6} =$$

$$9. \frac{5}{8} \div \frac{15}{16} =$$

$$10. \frac{15}{16} \div \frac{5}{8} =$$

$$11. \frac{7}{12} \div \frac{3}{4} =$$

$$12. \frac{8}{9} \div \frac{9}{8} =$$

$$13. 2 \div \frac{3}{8} =$$

$$14. 6 \div \frac{1}{2} =$$

$$15. \frac{3}{4} \div 4 =$$

1-3**Study Guide and Intervention****Order of Operations**

Use the order of operations to evaluate numerical expressions.

1. Do all operations within grouping symbols first.
2. Evaluate all powers before other operations.
3. Multiply and divide in order from left to right.
4. Add and subtract in order from left to right.

EXAMPLE 1 Evaluate $(10 - 2) - 4 \cdot 2$.

$$\begin{aligned} (10 - 2) - 4 \cdot 2 &= 8 - 4 \cdot 2 && \text{Subtract first since } 10 - 2 \text{ is in parentheses.} \\ &= 8 - 8 && \text{Multiply 4 and 2.} \\ &= 0 && \text{Subtract 8 from 8.} \end{aligned}$$

EXAMPLE 2 Evaluate $8 + (1 + 5)^2 \div 4$.

$$\begin{aligned} 8 + (1 + 5)^2 \div 4 &= 8 + 6^2 \div 4 && \text{First, add 1 and 5 inside the parentheses.} \\ &= 8 + 36 \div 4 && \text{Find the value of } 6^2. \\ &= 8 + 9 && \text{Divide 36 by 4.} \\ &= 17 && \text{Add 8 and 9.} \end{aligned}$$

EXERCISES

Evaluate each expression.

1. $(1 + 7) \times 3$

2. $28 - 4 \cdot 7$

3. $5 + 4 \cdot 3$

4. $(40 \div 5) - 7 + 2$

5. $35 \div 7(2)$

6. 3×10^3

7. $45 \div 5 + 36 \div 4$

8. $42 \div 6 \times 2 - 9$

9. $2 \times 8 - 3^2 + 2$

10. $5 \times 2^2 + 32 \div 8$

11. $3 \times 6 - (9 - 3)^3$

12. 3.5×10^2

1-3**Practice: Skills****Order of Operations**

Evaluate each expression.

1. $9 - 3 + 4$

2. $8 + 6 - 5$

3. $12 \div 4 + 5$

4. $25 \times 2 - 7$

5. $36 \div 9(2)$

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

7. $3 \times 6.2 + 5^2$

8. $(1 + 11)^2 \div 3$

9. $12 - (2 + 8)$

10. $15 - 24 \div 4 \cdot 2$

11. $(4 + 2) \cdot (7 + 4)$

12. $(3 \cdot 18) \div (2 \cdot 9)$

13. $24 \div 6 + 4^2$

14. $3 \times 8 - (9 - 7)^3$

15. $9 + (9 - 8 + 3)^4$

16. $3 \times 2^2 + 24 \div 8$

17. $(15 \div 3)^2 + 9 \div 3$

18. $(52 \div 4) + 5^3$

19. 26×10^3

20. 7.2×10^2

21. $5 \times 4^2 - 3 \times 2$

22. $24 \div 6 \div 2$

23. $13 - (6 - 5)^5$

24. $(8 - 3 \times 2) \times 6$

25. $(11 \cdot 4 - 10) \div 2$

26. $10 \div 2 \times (4 - 3)$

27. 1.82×10^5

28. $35 \div 7 \times 2 - 4$

29. $2^5 + 7(9 - 1)$

30. $12 + 16 \div (3 + 1)$

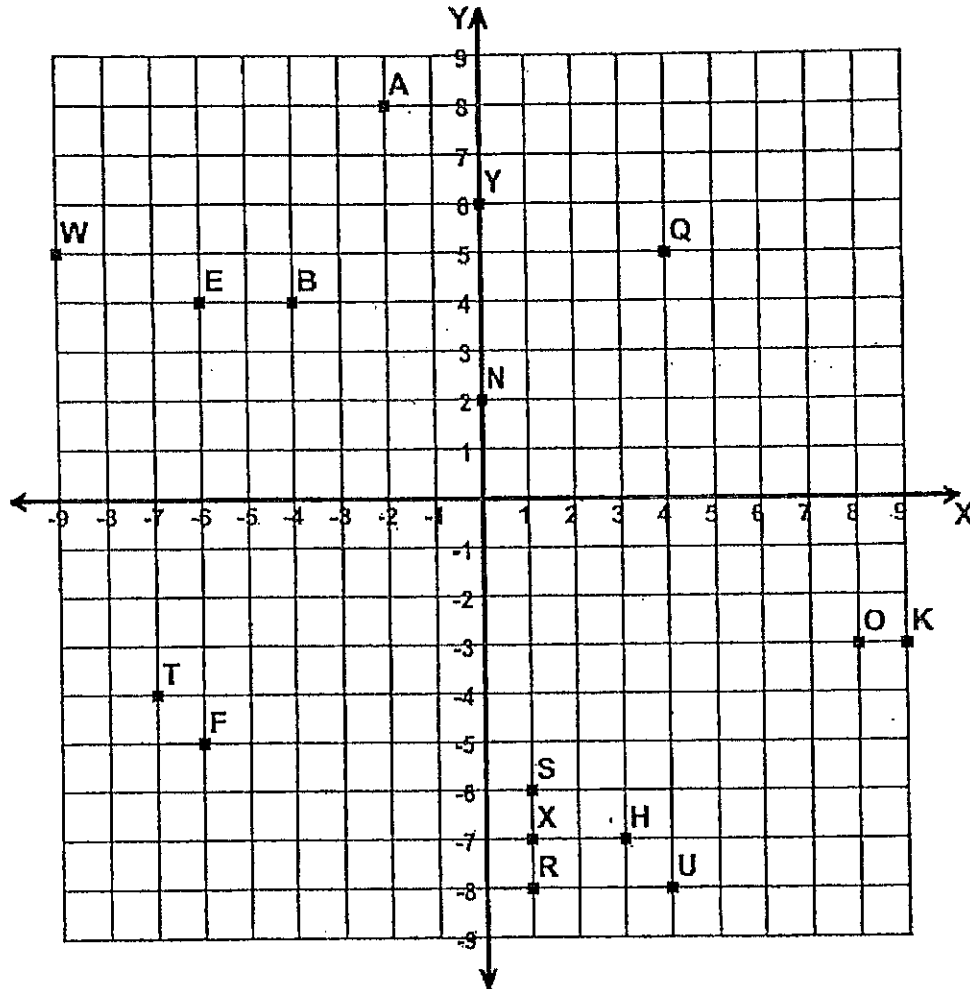
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Score : _____

Teacher : _____

Date : _____

Four Quadrant Ordered Pairs



Tell what point is located at each ordered pair.

- 1) $(+9,-3)$ _____ 3) $(+0,+2)$ _____ 5) $(+0,+6)$ _____ 7) $(+1,-7)$ _____
2) $(+4,-8)$ _____ 4) $(+1,-8)$ _____ 6) $(-7,-4)$ _____ 8) $(-6,+4)$ _____

Write the ordered pair for each given point.

- 9) Q _____ 11) H _____ 13) A _____ 15) S _____
10) O _____ 12) F _____ 14) B _____ 16) W _____

Plot the following points on the coordinate grid.

- 17) J $(+5,+8)$ 19) C $(-9,+4)$ 21) G $(+9,-6)$ 23) P $(+8,-9)$
18) M $(-3,-9)$ 20) V $(-8,-5)$ 22) Z $(+5,-6)$ 24) I $(-9,-4)$





6th Kavy

Unit Rate: Remember, you may always use a proportion/ equivalent ratio to help you!

Show all work!

1. A skydiver falls 144 feet in three seconds. How far does the skydiver fall per second?

2. Four gallons of gasoline cost \$16.80. What is the price per gallon?

3. Amy drove to her mother's house, which is 204 miles away. If it took her three hours, what was her average speed?

4. David walks $2\frac{1}{4}$ miles in $\frac{1}{2}$ an hour. What is his rate in miles per hour?

At this rate, how long will it take him to walk 18 miles?

If he walks for 7 hours, how far will he have gone?

5. Erica babysits for 4.5 hours and is paid \$27.00. How much does she make per hour?

How much does she make in 8 hours?

If the people she babysits for have \$34 to pay her, how long can they stay out?

6. Lauren took 12 hours to read a 360 page book. At this rate, how long will it take her to read a 400 page book?

7. Five lemons cost \$1.80.

a. What is the cost per lemon?

b. At this rate, what is the cost of 9 lemons?

8. Ashley needs to ride her bike to her friend's house 96 miles away. She is riding at an average speed of 15 miles per hour. She has 6 hours to get there. Will she make it in time?

9. Michael is headed to his aunt's house. For the first two hours, he drives at 55 mph. For the next hour, he drives 70 mph. For the final two hours, he drives 50 mph. How far does he travel?

Better Buy (Remember, you may use a proportion to help!)

10. It costs \$3.99 for 25 ounces of detergent or \$6.99 for 90 ounces. Which is the better buy?

11. Which is the best buy?

- a. 6 shirts for \$25.50 b. 4 shirts for \$18.00 c. 5 shirts for \$21

Fraction Word Problems

12. A wholesale supplier carried files weighing $23\frac{3}{4}$ pounds to a retail store. If he packs them into bags of $2\frac{3}{4}$ pounds each, how many bags are there?
13. Justin had $58\frac{4}{5}$ yards of ribbon. If he divided them into lengths of $4\frac{1}{5}$ yards, how many such lengths were there?
14. Spencer has $8\frac{3}{4}$ pounds of chicken nuggets. If he has them in packs of $1\frac{1}{3}$ pounds, how many packs will there be?

Percent Word Problems (Remember you may use a proportion or equivalent ratio to solve!)

$$\frac{\%}{100} = \frac{\textit{part}}{\textit{whole}}$$

15. Mike had 180 blue and red pencils. He had 45 blue pencils. What percentage of his pencils are red?

16. The bill in a restaurant totaled \$45.50. We wanted to give a tip of 20%. How much did we pay altogether?

17. Pete had 140 candies. He kept 28 candies for himself. What percentage of the candies did he give away?

18. John bought 18 pizzas. Michael bought 12 pizzas. What percentage of the total number of pizzas did Michael buy?

19. Twenty-five percent of my candies are chocolate candies. I have 20 chocolate candies. How many candies do I have altogether?

