



# 7TH GRADE SUMMER PACKET



## Directions for Summer Math Assignment

1. Refresh your memory by looking through the examples you have been given.
2. Try your best!
3. Show all of your work! If you do not have enough space, you can show your work on loose-leaf and write your answer in the boxes provided.
4. Make sure to bring this packet with you when we return to school next year.
5. Login to iReady to continue practicing your lessons. You should complete 3 hours of iReady lessons throughout the summer.
6. Have a great summer 😊

## iReady Login Information

My login information for my iReady Connect app:

Username:

Password:

# Addition & Subtraction of Fractions & Mixed Numbers

## Adding & Subtracting Fractions

1. Find a common denominator.
2. Add or subtract the two numerators and keep the denominator the same.
3. Simplify the answer and/or change improper fraction answers to mixed numbers.

ex:  $\frac{1}{3} + \frac{1}{6}$

$$\begin{array}{r} \frac{1}{3} \times \frac{2}{2} = \frac{2}{6} \\ + \frac{1}{6} \times \frac{1}{1} = \frac{1}{6} \\ \hline \frac{3}{6} = \frac{1}{2} \end{array}$$

## Adding Mixed Numbers

1. Find a common denominator.
2. Add the two numerators and keep the denominator the same.
3. Add the whole numbers.
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

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

$$\begin{array}{r} 2\frac{3}{4} = 2\frac{9}{12} \\ + 1\frac{2}{3} = 1\frac{8}{12} \\ \hline 3\frac{17}{12} = 4\frac{5}{12} \end{array}$$

## Subtracting Mixed Numbers

1. Find a common denominator.
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.
3. Subtract the whole numbers.
4. Simplify the answer.

ex:  $3\frac{1}{4} - 1\frac{1}{3}$

$$\begin{array}{r} 3\frac{1}{4} = 2\frac{3}{4} + \frac{1}{4} = 2\frac{3}{12} + \frac{3}{12} = 2\frac{6}{12} \\ - 1\frac{1}{3} = 1\frac{4}{12} \\ \hline 1\frac{2}{12} = 1\frac{1}{6} \end{array}$$

Find the sum. Write your answer in simplest form.

1. $\frac{1}{4} + \frac{1}{2}$	2. $\frac{2}{5} + \frac{1}{3}$	3. $\frac{7}{15} + \frac{3}{10}$	4. $\frac{11}{28} + \frac{4}{7}$
5. $\frac{3}{4} + \frac{1}{12}$	6. $\frac{9}{10} + \frac{13}{20}$	7. $4\frac{15}{16} + 7\frac{3}{4}$	8. $2\frac{16}{25} + 3\frac{18}{20}$
9. $3\frac{2}{5} + 9\frac{1}{10}$	10. $6\frac{1}{42} + 4\frac{5}{6}$	11. $18\frac{7}{9} + 16$	12. $4\frac{7}{8} + \frac{1}{3}$

Find the difference. Write your answer in simplest form.

13. $\frac{7}{8} - \frac{1}{4}$	14. $\frac{13}{15} - \frac{1}{3}$	15. $\frac{7}{9} - \frac{2}{6}$	16. $\frac{21}{24} - \frac{3}{8}$
17. $\frac{3}{14} - \frac{1}{7}$	18. $\frac{9}{10} - \frac{1}{2}$	19. $9 - 4\frac{1}{12}$	20. $12\frac{18}{25} - 8\frac{4}{5}$
21. $5\frac{8}{9} - 3\frac{2}{3}$	22. $8\frac{12}{16} - 7\frac{31}{32}$	23. $10\frac{3}{4} - 6\frac{4}{5}$	24. $13\frac{7}{8} - \frac{10}{12}$

# Multiplication & Division of Fractions & Mixed Numbers

## Multiplying Fractions & Mixed Numbers

1. Turn any mixed numbers and whole numbers into improper fractions.
2. Cross-simplify if possible.
3. Multiply the numerators and then multiply the denominators
4. Simplify the answer and/or change improper fraction answers to mixed numbers.

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

$$\begin{array}{c} \cancel{3} \\ \frac{1}{4} \cdot \frac{1}{\cancel{3}} = \boxed{\frac{3}{4}} \end{array}$$

## Dividing Fractions & Mixed Numbers

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

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

$$\begin{array}{c} \frac{7}{1} \div \frac{7}{4} \\ \downarrow \\ \frac{7}{1} \cdot \frac{4}{\cancel{7}} = \frac{4}{1} = \boxed{4} \end{array}$$

Find the product. Write your answer in simplest form.

25. $\frac{1}{8} \cdot \frac{1}{7}$	26. $\frac{2}{9} \cdot \frac{12}{14}$	27. $\frac{7}{12} \cdot \frac{8}{14}$	28. $\frac{9}{24} \cdot \frac{16}{81}$
29. $\frac{3}{14} \cdot \frac{21}{33}$	30. $\frac{1}{2} \cdot \frac{9}{13}$	31. $2\frac{1}{6} \cdot \frac{3}{5}$	32. $8\frac{4}{5} \cdot 1\frac{5}{11}$
33. $2\frac{1}{2} \cdot \frac{2}{5}$	34. $9\frac{2}{3} \cdot 6$	35. $13\frac{1}{3} \cdot 2\frac{1}{10}$	36. $7 \cdot \frac{1}{3}$

Find the quotient. Write your answer in simplest form.

37. $\frac{5}{6} \div \frac{1}{4}$	38. $\frac{1}{2} \div \frac{1}{4}$	39. $\frac{3}{4} \div \frac{9}{12}$	40. $\frac{21}{35} \div \frac{7}{25}$
41. $\frac{6}{7} \div 3$	42. $\frac{2}{11} \div \frac{1}{33}$	43. $1\frac{1}{4} \div 2\frac{1}{3}$	44. $5\frac{3}{6} \div 3$
45. $10\frac{1}{4} \div \frac{2}{5}$	46. $3\frac{2}{3} \div 1\frac{1}{7}$	47. $4\frac{3}{8} \div \frac{9}{10}$	48. $8 \div \frac{3}{4}$

# Operations with Decimals

## Adding & Subtracting Decimals

1. 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.
3. Add/subtract as if the numbers are whole numbers
4. Bring the decimal point straight down

ex:  $10.03 + 5.2$

$$\begin{array}{r} 10.03 \\ + 5.20 \\ \hline 15.23 \end{array}$$

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

ex:  $1.03 \times 2.8$

$$\begin{array}{r} 1.03 \rightarrow 2 \text{ decimal places} \\ \times 2.8 \rightarrow 1 \text{ decimal place} \\ \hline 824 \\ + 2060 \\ \hline 2884 \end{array} \rightarrow \begin{array}{r} 3 \text{ decimal places} \\ \downarrow \\ \boxed{2.884} \end{array}$$

## 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.

ex:  $25.3 \div 0.3$

$$\begin{array}{r} \boxed{84.\bar{3}} \\ 0.3 \overline{) 25.3} \\ \underline{-24} \phantom{0} \\ 13 \\ \underline{-12} \\ 10 \\ \underline{-9} \\ 1 \end{array}$$



Find the sum or difference.

49. $6.2 + 3.4$	50. $8.04 - 6.8$	51. $12.4 + 0.899$	52. $12.9 - 2.043$
53. $163.29 + 13.987$	54. $13 - 6.7$	55. $3.91 + 1.93$	56. $34.2 - 29.027$

Find the product.

57. $9.2 \cdot 3.1$	58. $(14.1)(2.7)$	59. $91 \times 4.5$	60. $82.04 \times 1.2$
61. $(1.1)(6.78)$	62. $45 \cdot 0.1$	63. $0.010 \times 13.9$	64. $(2.34)(5.6)$

Find the quotient.

65. $8.4 \div 2$	66. $1.56 \div 1.3$	67. $7.45 \div 2$	68. $9 \div 0.8$
69. $68 \div 3.4$	70. $9.4 \div 0.2$	71. $0.045 \div 0.15$	72. $4 \div 0.3$

# One-Step Equations

## Addition Equations

Subtract the number being added to the variable from both sides of the equation

$$\begin{array}{r} \text{ex: } 4 + x = 18 \\ \underline{-4 \quad -4} \\ x = 14 \end{array}$$

## Subtraction Equations

Add the number being subtracted from the variable to both sides of the equation

$$\begin{array}{r} \text{ex: } 20 = a - 5 \\ \underline{+5 \quad +5} \\ 25 = a \rightarrow a = 25 \end{array}$$

## Multiplication Equations

Divide both sides of the equation by the number next to the variable

$$\begin{array}{r} \text{ex: } 7b = 28 \\ \underline{\div 7 \quad \div 7} \\ b = 4 \end{array}$$

## Division Equations

Multiply both sides of the equation by the number under the variable

$$\begin{array}{r} \text{ex: } 5 \cdot \frac{n}{5} = 10 \cdot 5 \\ \underline{\quad \quad \quad} \\ n = 50 \end{array}$$

Solve each one-step equation for the given variable.

81. $x + 18 = 32$	82. $18f = 720$	83. $h - 56 = 57$	84. $\frac{b}{6} = 12$
85. $12 = r - 76$	86. $33 + d = 65$	87. $14m = 42$	88. $10c = 5$
89. $38 = 19j$	90. $w + 65 = 100$	91. $r - 7 = 9$	92. $x \div 12 = 9$
93. $14 + x = 18$	94. $\frac{p}{22} = 7$	95. $47 = x - 5$	96. $k + 16 = 76$
97. $2 = 6m$	98. $t - 8 = 14$	99. $\frac{h}{19} = 11$	100. $47 = 18 + b$

# Operations with Integers

## Adding Integers

- Negative + Negative: Add the absolute values of the two numbers and make the answer negative.

$$\text{ex: } -5 + (-9) \rightarrow 5 + 9 = 14 \rightarrow \text{answer: } \textcircled{-14}$$

- Negative + Positive (or Positive + Negative): Subtract the absolute values of the two numbers (larger minus smaller) and take the sign of the number with the greater absolute value.

$$\text{ex: } -7 + 12 \rightarrow 12 - 7 = 5 \rightarrow 12 > 7, \text{ so answer is positive} \rightarrow \text{answer: } \textcircled{5}$$

$$\text{ex: } 6 + (-9) \rightarrow 9 - 6 = 3 \rightarrow 9 > 6, \text{ so answer is negative} \rightarrow \text{answer: } \textcircled{-3}$$

## Subtracting Integers

- Keep the first number the same, change the subtraction sign to an addition sign, and change the sign of the second number. Then use the integer addition rules.

$$\text{ex: } -3 - 9 \rightarrow -3 + (-9) = \textcircled{-12}$$

$$\text{ex: } 15 - (-8) \rightarrow 15 + 8 = \textcircled{23}$$

$$\text{ex: } -6 - (-4) \rightarrow -6 + 4 = \textcircled{-2}$$

## Multiplying & Dividing Integers

Ignore the signs and multiply or divide as usual. Then determine the sign of the answer using the following rules:

- Negative  $\cdot$  or  $\div$  Negative = Positive
- Negative  $\cdot$  or  $\div$  Positive (or Positive  $\cdot$  or  $\div$  Negative) = Negative

$$\text{ex: } -3 \cdot (-5) \rightarrow 3 \cdot 5 = 15 \rightarrow \text{neg} \cdot \text{neg} = \text{pos} \rightarrow \text{answer: } \textcircled{15}$$

$$\text{ex: } 48 \div (-6) \rightarrow 48 \div 6 = 8 \rightarrow \text{pos} \div \text{neg} = \text{neg} \rightarrow \text{answer: } \textcircled{-8}$$

## Order of Operations

Parentheses

Exponents

Multiplication & Division (left to right)

Addition & Subtraction (left to right)

Find the sum or difference.

1.  $-80 + 77$

2.  $77 + 160$

3.  $-64 + (-33)$

4.  $104 - (-92)$

5.  $-105 - (-122)$

6.  $185 - (-154)$

7.  $-53 - (-59)$

8.  $-6 + (-35)$

9.  $15 - (-26) - (-39)$

10.  $-93 + 191 + (-179)$

11.  $18 + (-34) + 52$

12.  $-50 - (-93) + (-17)$

---

Find the product or quotient.

13.  $60 \div 12$

14.  $-194 \div (-2)$

15.  $88 \cdot (-2)$

16.  $-12 \cdot 10$

17.  $-10 \cdot (-11)$

18.  $90 \div (-6)$

19.  $3 \cdot (-59)$

20.  $-7 \cdot (-2)$

21.  $-28 \div (-88) \cdot (-22)$

22.  $-56 \cdot 140 \div (-80)$

23.  $108 \div (-11) \cdot (-11)$

24.  $-84 \cdot (-17) \div 42$

---

Evaluate the numerical expression. (Be sure to use the order of operations!)

25.  $-78 + (-2) \cdot (-56)$

26.  $-65 + 6 \div (-3) + 40$

27.  $-94 - (84 - 10)$

28.  $43 + (-23) - (-57)$

29.  $-15 - (-11) + 5 \cdot (-4)$

30.  $-26 - (-64) + (-93)$

31.  $-84 \div 4 + (-20)$

32.  $-56 + (-50) + (-10) \cdot (-9)$