



Directions: Your summer math packet is broken down into 3 sections that cover the essential math skills needed to be successful in Math 7. Your packet will be collected and counted as a Homework grade. YOU MUST SHOW ALL WORK FOR CREDIT!! For each section:

- Complete the practice problems.(be sure to review them again right before school starts!)
- Watch the EdGems/YouTube Video Lessons to refresh your memory of skills you learned this past year.

At the end of this packet you will find additional (optional) skill practice in IXL on important topics that will prepare you for your next math course.

- *You may already have earned a smart score of 80 in some of the listed IXL skill sets. If so, then please consider working towards a smart score of 95-100.*

Section I: Ratios and Proportional Relationships

EdGems Video Lesson Links
(most video links on this document are from EdGems course 1 resource)

[1.3 Rates and Unit Rates](#)
[1.4 Comparing Rates](#)
[3.2 Percents, Decimals, and Fractions](#)
[3.4 Percent Applications](#)

Find each unit rate:

1. $\frac{12 \text{ miles}}{3 \text{ hours}}$

2. $\frac{72 \text{ pages}}{8 \text{ minutes}}$

3. $\frac{\$36.00}{12 \text{ pounds}}$

Complete each equivalent rate:

4. $\frac{30 \text{ miles}}{1 \text{ gallon}} = \frac{\quad}{5 \text{ gallons}}$

5. $\frac{5 \text{ miles}}{1 \text{ gallon}} = \frac{\quad}{9 \text{ hours}}$

6. $\frac{\$4.20}{1 \text{ gallon}} = \frac{\quad}{12 \text{ gallons}}$

7. Alicia biked 84 miles in 3 hours. At this rate, how far will she bike in 5 hours?

8. Sara's hybrid car traveled 450 miles using 15 gallons of gas. At this rate, how many miles can she travel using 6 gallons?



14. Sarah bought a video game at a local store. It was originally \$39.99, but it was on sale for 15% off.

a. How much was the discount?

b. How much did Sarah pay for the game excluding tax?

15. Below are two restaurant bills with the total given before the tip. Each customer left a 20% tip. Find the amount of money left for each tip. Round to the nearest hundredth if necessary.

a. Total bill: \$18.00

b. Total bill: \$27.25

16. Emma went to Oregon and found a bike for \$320.00 that she wanted. If she buys the bike in Oregon, she will be charged 5% sales tax on the purchase.

a. How much sales tax will Emma pay on the bike?

b. How much will she pay for the bike, including sales tax?



Section II: The Number System

Ed Gems Video Lesson Links

[2.1 Add and Subtract Decimals](#)
[2.2 Multiply Decimals](#)
[2.5 Dividing Decimals](#)
[2.6 Common Factors and Multiples](#)
[Add and Subtract Fractions](#)
[4.4 Multiply and Divide Mixed Numbers](#)
[7.2 Comparing Rational Numbers](#)
[7.4 Coordinate Plane](#)

17. Find each sum or difference without a calculator.

a. $9.812 + 8.4 =$

b. $3.9 + 5.334 =$

c. $8.6 - 5.51 =$

d. $33.333 - 22.555 =$

18. A rectangle had a length of 4.5 inches and a width of 2.67 units. How much longer was the length of the rectangle than its width?

Find each product without a calculator.

19. $9 \times 9.13 =$

20. $5 \times 0.043 =$

Find each quotient without a calculator. Round to the nearest tenth, if necessary.

21. $1.4 \div 0.5 =$

22. $11.781 \div 0.25 =$



Find the greatest common factor (GCF) of each set of numbers.

23. 18, 54

24. 10, 75

Find the least common multiple (LCM) of each set of numbers.

25. 3 and 4

26. 10 and 12

27. Josh visits his parents every eight days. He visits his brother every twelve days. If he visited his parents and his brother today, how many days until Josh visits both his parents and his brother again on the same day?

Find the sum or difference of the following fractions. Write your answers in simplest form.

28. $\frac{4}{5} + \frac{9}{10} =$

29. $\frac{5}{9} - \frac{3}{8} =$

30. *Find each product or quotient. Write your answers in simplest form.*

a. $\frac{1}{8} \times 5 =$

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

c. $\frac{2}{5} \div 3 =$

d. $6\frac{1}{8} \div 2\frac{3}{4} =$

31. Michael won $\frac{2}{3}$ of the six grand prize ribbons awarded at the local fair for showing rabbits. How many grand prize ribbons did Michael win?



32. Complete each statement using $<$ or $>$.

a. 0.4 _____ 0.6

b. $-\frac{1}{4}$ _____ $-\frac{1}{2}$

c. $-\frac{3}{5}$ _____ -0.55

d. $-|-1.5|$ _____ $|-4|$

33. Order each list of numbers from least to greatest.

a. $-0.3, -1.1, 2, -0.9, 0.4$

b. $0, -1.9, -\frac{1}{3}, 0.25, -1\frac{4}{5}$

34. Write the ordered pair for each point on the coordinate plane below.

a. P _____

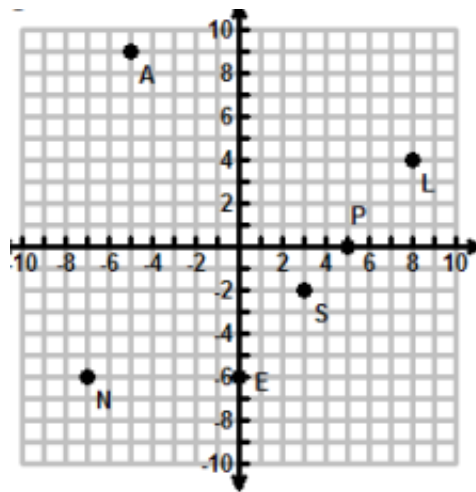
b. L _____

c. A _____

d. N _____

e. E _____

f. S _____



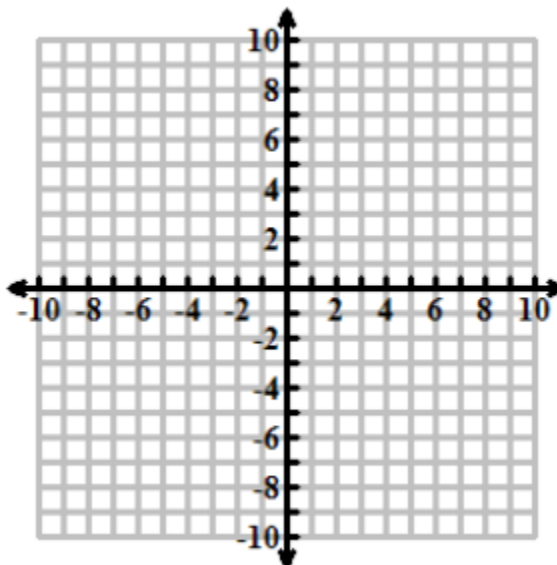
35. On the coordinate plane below, graph and label the following ordered pairs.

a. M (0, 6)

b. U (9, 4)

c. S (-3, 2)

d. I (-4, -1)





Section III: Expressions and Equations

Video Lesson Links

[5.2 Order of Operations](#)
[5.3 Variables and Expressions](#)
[5.4 Evaluating Expressions](#)
[5.6 Distributive Property](#)
[6.2/6.3 Solve One Step Equations](#)

36. *Find the value of each expression.*

a. $(3 + 4)^2 - 14$

b. $16 \div 2 + 4 \times (7 - 3)$

c. $4 \times 3 + \frac{6 + 9}{3}$

d. $12 \div 3 + \frac{2+7}{5-2} - 6$

37. Three friends go to the movies. Each ticket costs \$7. They also buy one popcorn for \$7 and one bag of candy for \$5. The friends want to split the total cost evenly. **Write a numerical expression** to represent this situation and **determine how much each friend owes.**

38. *Write an algebraic expression for each phrase.*

a. eight more than p

b. twenty less than f

c. the quotient of y and five

d. two times a number z plus nine



39. Evaluate each expression.

a. $5x - 3$ when $x = 4$

b. $\frac{1}{4} + z$ when $z = \frac{1}{2}$

40. Evaluate each expression when $a = 4$, $b = 7$ and $c = 12$.

a. $c - 2a + 4b$

b. $\frac{4+c}{a}$

Complete each table by evaluating the given expression for the values listed.

41.

x	$4x + 3$
0	
$\frac{1}{4}$	
5	
6	
10	

42.

x	$\frac{6x + 4}{2}$
2	
3	
7	
30	

43. Simplify each expression (use the distributive property and combine like terms when possible).

a. $3(k + 4)$

b. $4(y - 0.2)$

c. $7(6x + 3) - 8$

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



44. *Factor each expression using the greatest common factor.*

a. $10 + 35$

b. $2m + 10$

45. *Solve each equation. Check each solution.*

a. $y - 7 = 21$

b. $p + 1.6 = 4.4$

c. $4t = 32$

d. $\frac{x}{6} = 7$

46. *Write an algebraic equation for each sentence. Solve each equation.*

a. The sum of x and three equals fifteen.

b. The quotient of x divided by six is eight.

47. Owen is thinking of two numbers. The sum of the numbers is 34. One of the numbers is 19. What is the other number? **Write an equation and solve** using inverse operations.

48. Norah is three times as old as her cousin. Norah is 12 years old. **Write a multiplication equation and solve** the equation to determine her cousin's age.



Additional recommended (optional) IXL practice. Log into IXL through ClassLink and type the codes below into the search bar. *If you have already earned a smart score of 80 in some of the listed IXL skill sets, please consider working towards a smart score of 95-100.*

IXL - Additional Recommended Practice (log in to IXL through ClassLink, then type the codes below into search bar)	
Section 1	
Unit rates: <i>JSZ</i>	Convert between percents, fractions and decimals: <i>ZAV</i>
Rates: word problems: <i>9AF</i>	Percents of numbers: word problems: <i>BBY</i>
Compare Rates: word problems: <i>NAF</i>	Percents: Calculate tax, tips and more: <i>8YA</i>
Compare Ratios: word problems: <i>2HT</i>	Sale prices: <i>5GH</i>
Section 2	
Add and subtract decimals: <i>4F6</i>	Greatest common factor: <i>AMB</i>
Add and subtract decimals: word problems: <i>97T</i>	Least common multiple: <i>NGA</i>
Add and subtract money: multi-step word problems: <i>97T</i>	Add and subtract mixed numbers: <i>2L3</i>
Multiply a decimal by a whole number: <i>CKB</i>	Multiply mixed numbers: <i>C7B</i>
Multiply decimals: <i>2WT</i>	Divide fractions and mixed numbers: <i>K6K</i>
Divide decimals by whole number: <i>NLL</i>	Compare rational numbers: <i>KS2</i>
Divide decimals by whole number: <i>NLL</i>	Put rational numbers in order: <i>5AX</i>
Divide decimals: <i>Y7C</i>	Objects on a coordinate plane: <i>GFN</i>
Multiply and divide decimals: word problems: <i>GZN</i>	Graph points on a coordinate plane: <i>VHQ</i>



IXL - Additional Recommended Practice

(log in to IXL through ClassLink, then type the codes below into search bar)

Section 3

Identify mistakes involving Order of Operations V46	Evaluate variable expressions: word problems 7XA
Evaluate numerical expressions involving whole numbers MLU	Factor numerical expressions using the distributive property MX2
Evaluate numerical expressions involving decimals YEE	Multiply using the distributive property 2HH
Evaluate numerical expressions involving fractions WNE	Factor variable expressions using the distributive property PGZ
Write variable expressions TPE	Solve one-step addition and subtraction equations with whole numbers JXM
Write variable expressions: word problems 6LQ	Solve one-step addition and subtraction equations with decimals and fractions 5D2
Evaluate variable expressions with whole numbers Q8Z	Solve one-step addition and subtraction equations: word problems 35Q
Evaluate multi-variable expressions HC9	



ANSWER KEY - Summer Math Packet for students Entering Math 7

<p>1. 4 miles per hour 2. 9 pages per minute 3. \$3.00 per pound 4. 150 miles 5. 45 miles 6. \$50.40</p> <p>7. 140 miles</p> <p>8. 180 miles</p> <p>9. She saves \$0.15 per bottle by choosing the 10-pack.</p> <p>10.a. $0.09 = 9\%$ b. $0.35 = 35\%$ c. $0.625 = 62.5\%$ d. $1.2 = 120\%$</p> <p>11. a. $\frac{3}{5} = 60\%$ b. $\frac{2}{8} = 25\%$ c. $\frac{2}{3} \approx 66.7\%$ d. $1\frac{1}{2} = 1.5 = 150\%$</p> <p>12. a. $\frac{1}{3}, 35\%, 0.4$</p> <p>b. $\frac{5}{8}, 0.7, 75\%$</p> <p>c. $1\frac{1}{3}, 1.5, 160\%$</p> <p>13. Class Survey:</p> <p>a. 70% prefer group work</p> <p>b. 30% prefer working alone</p> <p>14. a. \$6.00 discount b. Sarah paid \$33.99</p>	<p>15. a. tip: \$3.60 b. tip: \$5.45</p> <p>16. a. \$16.00 sales tax b. Total cost \$336.00</p> <p>17. a. $9.812 + 8.4 = 18.212$ b. $3.9 + 5.334 = 9.234$ c. $8.6 - 5.51 = 3.09$ d. $33.333 - 22.555 = 10.778$</p> <p>18. 1.83 inches longer</p> <p>19. $9 \times 9.13 = 82.17$ $20. 5 \times 0.043 = 0.215$</p> <p>21. $1.4 \div 0.5 = 2.8$ 22. $11.781 \div 0.25 = 47.1$</p> <p>23. GCF of 18 and 54 = 18 24. GCF of 10 and 75 = 5</p> <p>25. LCM of 3 and 4 = 12 26. LCM of 10 and 12 = 60 27. LCM = 24 days</p> <p>28. $1\frac{7}{10}$ 29. $\frac{13}{72}$</p> <p>30. a. $\frac{5}{8}$ b. $2\frac{1}{3}$ c. $\frac{2}{15}$ d. $2\frac{5}{22}$</p> <p>31. Michael won 4 ribbons</p> <p>32. a. $0.4 < 0.6$ b. $-\frac{1}{4} > -\frac{1}{2}$ c. $-\frac{3}{5} < -0.55$ d. $-1.5 < 4$</p> <p>33. a. -1.1, -0.9, -0.3, 0.4, 2 b. -1.9, -1$\frac{4}{5}$, -$\frac{1}{3}$, 0, 0.25</p>	<p>34. P(5,0) L(8,4) A(-5,9) N(-7,-6) E(0,-6) S(3,-2)</p> <p>35.</p> <p>36. a. 35 b. 24 c. 17 d. 1</p> <p>37. Expression: $(3 \times 7 + 7 + 5) \div 3$ Each owes: \$11</p> <p>38. a. $p + 8$ b. $f - 20$ c. $y / 5$ or $y \div 3$ d. $2z + 9$</p> <p>39. a. 17 b. $\frac{3}{4}$</p> <p>40. a. 32 b. 4</p> <p>41. <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr><th>x</th><th>4x + 3</th></tr> </thead> <tbody> <tr><td>0</td><td>3</td></tr> <tr><td>$\frac{1}{4}$</td><td>4</td></tr> <tr><td>5</td><td>23</td></tr> <tr><td>6</td><td>27</td></tr> <tr><td>10</td><td>43</td></tr> </tbody> </table> <p>42. <table border="1" style="display: inline-table;"> <thead> <tr><th>x</th><th>$\frac{6x + 4}{2}$</th></tr> </thead> <tbody> <tr><td>2</td><td>8</td></tr> <tr><td>3</td><td>11</td></tr> <tr><td>7</td><td>23</td></tr> <tr><td>30</td><td>92</td></tr> </tbody> </table></p> <p>43. a. $3k + 12$ b. $4y - 0.8$ c. $42x + 13$ d. $10m + 4$</p> <p>44. a. $5(2 + 7)$ b. $2(m + 5)$</p> <p>45. a. 28 b. 2.8 c. 8 d. 42</p> <p>46. a. $x + 3 = 15$ $x = 12$ b. $x \div 6 = 8$ or $x / 6 = 8$ $x = 48$</p> <p>47. Owen's #'s are 19 and 15 Equation: $x + 19 = 34$</p> <p>48. Equation: $3x = 12$ Her cousin is: 4 years old</p> </p>	x	4x + 3	0	3	$\frac{1}{4}$	4	5	23	6	27	10	43	x	$\frac{6x + 4}{2}$	2	8	3	11	7	23	30	92
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