Summer Math Packet

For Students Entering Pre-Algebra (Math 8)

Dear student,

Last year, you learned and polished an assortment of mathematical skills. Going long periods of time without practicing these skills leads to deterioration and regression, so it is important to continue practicing over the summer in order to build your mathematical foundation. I recommend completing one or two pages a week throughout the summer to keep sharp.

This packet is due the day that you return for school and will be counted as a large chunk of the first trimester's homework credit. **Show your work to earn credit** – attach any extra work if you did any that does not fit in the packet itself. No calculators! Please contact Mr. Holton if you have any questions. Have a great summer, but don't forget what you've learned!

Note: each page has eight problems. You may skip one problem per page, but the seven problems that you choose to do should be thoroughly answered with detailed work!

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 1

SET A

1. Which is equivalent to the fraction below?

$$\frac{5}{8}$$

A. 0.58

B. 0.625

C. 0.675

D. 1.6

2. A theater has 34 rows of seats. If there are 17 seats in each row, how many seats are in the theater?

3. Which numbers are divisible by 3? Check all that apply.

☐ 78	☐ 139	☐ 203
☐ 397	☐ 414	☐ 657

4. What is the value of the expression below in simplest form?

$$\frac{12}{4^3}$$

A. 1

B. 27

C. $\frac{3}{16}$

D. $\frac{3}{8}$

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 1

SET B

1. The table below gives the weight of three packages. What is the difference between the combined weight of Package A and Package B and the weight of Package C?

Package	A	B	C
Weight (oz)	2.93	1.7	5.04

2. Which set of numbers has a greatest common factor of 12?

A. 3 and 4

B. 6 and 18

C. 32 and 48

D. 36 and 96

3. What is the product of 2.5 and 7.08?

4. Which number has a 7 in the hundredths place?

A. 108.0754

B. 702.1625

C. 65.5172

D. 149.7028

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 2

SET A

1. Alyssa filled her car tank with 16.8 gallons of gas. If gas costs $2.85 per gallon, how much did she pay? Round to the nearest cent.

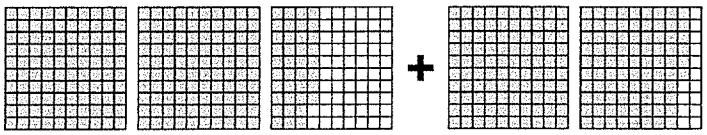
2. Which expression results in the greatest value?

A. -20 + (-3)
B. -17 + 12
C. -14 + (-18)
D. -8 + 9

3. Bus A stops at a certain bus stop every 25 minutes. Bus B stops at the same stop every 40 minutes. If both buses are at the bus stop at 9:30 a.m., when is the next time they will be there together again?

A. 12:20 p.m.
B. 12:50 p.m.
C. 1:10 p.m.
D. 1:30 p.m.

4. What is the value of the expression modeled by the decimal grids below?



A. 4.24
B. 4.32
C. 4.38
D. 4.46

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 2

SET B

1. On a certain day, Miquel had a credit of $75 in his checking account and spent $240. Which represents the total change in his account that day?

A. $315
B. $365
C. -$135
D. -$165

2. Which fraction is equivalent to 0.008?

A. $\frac{2}{250}$
B. $\frac{4}{250}$
C. $\frac{2}{25}$
D. $\frac{4}{25}$

3. If the fractions below are equivalent, what are possible values for m and n?

$$\frac{16}{36}, \frac{m}{n}$$

A. $m = 4, n = 6$
B. $m = 12, n = 32$
C. $m = 20, n = 42$
D. $m = 24, n = 54$

4. In which quadrant is the point (7, -2) located on the coordinate plane?

A. Quadrant I
B. Quadrant II
C. Quadrant III
D. Quadrant IV

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 3

SET A

1. Give the value of the expression below as a fraction in simplest form.

$$\frac{11}{24} + \frac{5}{24}$$

2. What is the prime factorization of **120**?

A. $2^4 \times 3^5$

B. $2^3 \times 3 \times 5$

C. $2^4 \times 3 \times 5$

D. $3 \times 4^2 \times 5$

3. Which list of integers is in order from least to greatest?

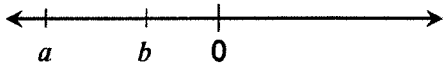
A. 3, 11, -18, 24, -45

B. 3, -11, -18, -24, -45

C. -45, -24, -18, 3, 11

D. -18, -24, -45, 3, 11

4. Based on the diagram below, which statement is true?



A. $a + b < a \div b$

B. $a + b > a \div b$

C. $a - b > a \div b$

D. $b - a < a + b$

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 3

SET B

1. There are 224 boys and 168 girls in the seventh grade. In which class is the ratio of boys and girls equivalent to the ratio in the seventh grade?

Class	Boys	Girls
A	12	8
B	18	10
C	15	9
D	16	12

2. Identity the digit in the thousands place of the number below.

47195.23806

3. The projected low temperature on a certain day in a city in Alaska is -17° C. If this is 5 degrees colder than the average low temperature for this day, what is the average low temperature?

A. 12° C

B. 22° C

C. -12° C

D. -22° C

4. Mr. Smith owns a 7.5-acre plot of land. If he paid $2,049 in property taxes this year, what is the tax cost per acre?

A. $272.80

B. $273.20

C. $274.60

D. $276.40

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 4

SET A

1. Find the quotient of 32 and 7. Round your answer to the nearest tenths place.

2. Leonard began a road trip with 27.5 gallons of gas in his car's gas tank. If he has used two-thirds of the amount of gas he began with, how many gallons of gas are left in the tank?

A. $9\frac{1}{3}$ gallons **C.** $9\frac{1}{6}$ gallons

B. $18\frac{5}{6}$ gallons **D.** $18\frac{1}{3}$ gallons

3. The opposite of an integer x is 16. Which statement must be true?

A. The absolute value of x is -16.

B. Half of x is 8.

C. Twice x is -32.

D. Six less than x is -10.

4. Which best describes the number 237?

A. It is a prime number.

B. It is a composite number.

C. It is both prime and composite.

D. It is neither prime nor composite.

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 4

SET B

1. Jordan and Zach ran a mile. Jordan ran the mile 5 seconds slower than Zach. If Zach ran the mile in $8\frac{3}{4}$ minutes, how long did it take Jordan?

A. $8\frac{1}{3}$ minutes **C.** $8\frac{2}{3}$ minutes

B. $8\frac{7}{8}$ minutes **D.** $8\frac{5}{6}$ minutes

2. What number is in the hundredths place when 7.95 is subtracted from 13.082?

A. 1

B. 2

C. 3

D. 5

3. Choose two integers that have a sum of -12.

☐ 2	☐ 4	☐ 6	☐ 8
☐ -2	☐ -4	☐ -6	☐ -8

4. Alaina went to the mall and purchased eight candles at $6 each and spent $15 on lunch. She paid for the candles and the shirts using her debit card. Which integer represents the change in Alaina's bank account after making these purchases?

A. -63

B. -58

C. -52

D. -32

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 5

SET A

1. What is the greatest common factor of 54 and 96?

2. A hockey team has won 27 of their first 40 games. What percent of the games have they won?

A. 62.5%

B. 64.5%

C. 67.5%

D. 71.5%

3. How many $\frac{5}{8}$-inch-thick slices of bread can be cut from a loaf of bread that is $16\frac{1}{2}$ inches long?

A. 25

B. 26

C. 27

D. 28

4. Josh's mom gave him money to spend at an amusement park. So far, he's used $\frac{3}{10}$ of the money on games and $\frac{1}{4}$ of the money on rides. What fraction of the money does he have left? Give your answer as a fraction in simplest form.

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 5

SET B

1. Which product results in a 5 in the tens place?

A. 12.16 × 1.25

B. 1.5 × 0.9

C. 21.45 × 0.4

D. 67.2 × 0.75

2. The depth of a lake at a dock is 8 feet. The deepest part of the lake is 52 feet deeper than this point. Which expression can be used to find the depth of the lake at its deepest point relative to the surface of the water?

A. -8 – (-52)

B. 8 – (-52)

C. -52 + 8

D. -52 + (-8)

3. 1.6% falls between which two values?

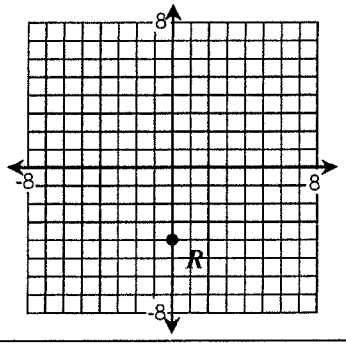
A. 0.001 and 0.02

B. 0.1 and 0.2

C. 1.5 and 1.7

D. 0.15 and 0.17

4. Give the coordinates of point R on the graph below.



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MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 6

SET A

1. Find the value of the expression below.

$$9^3 + 2^5$$

2. If c is the least common multiple of a and b, which must be true?

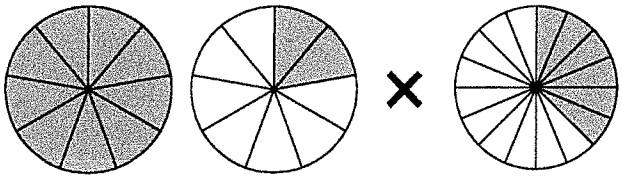
A. $c < b$ and $c < a$

B. $c \leq b$ and $c \leq a$

C. $c > b$ and $c > a$

D. $c \geq b$ and $c \geq a$

3. Which expression is equivalent to the diagram below?



A. $1\frac{2}{9} \div \frac{3}{8}$

B. $\frac{9}{11} \div \frac{3}{8}$

C. $1\frac{2}{9} \div 2\frac{2}{3}$

D. $\frac{9}{11} \div 2\frac{2}{3}$

4. What is **2.5** written as a percent?

A. 0.25%

B. 2.5%

C. 25%

D. 250%

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 6

SET B

1. Write **45%** as a fraction in simplest form.

2. Which number is not a perfect square?

A. 9

B. 196

C. 228

D. 361

3. Which expressions result in a value that is greater than -16? Check all that apply.

☐ -21 – 4	☐ -12 + (-5)
☐ 11 + (-3)	☐ 3 – (-14)
☐ 19 – 34	☐ -25 + 13

4. If $4\frac{1}{2}$ inches is cut from a board that is $2\frac{1}{2}$ feet long, find the new length of the board.

A. $1\frac{7}{8}$ feet

B. $1\frac{3}{4}$ feet

C. $2\frac{1}{8}$ feet

D. $2\frac{1}{4}$ feet

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 7

SET A

1. Evaluate the expression below.

$$(-6-1)^2 - 9 \cdot 2^3 + |-6|$$

2. What is the sum of the factors of 60 that are also prime numbers?

A. 10

B. 11

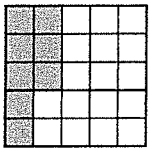
C. 20

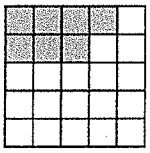
D. 21

3. In which diagram is 35% of the boxes shaded?

A. 

C. 

B. 

D. 

4. Margo, Nia, and Alana went out for dinner. Nia's bill came to $27.51. Margo's bill was $0.37 less than Nia's bill. Alana's bill was $4.59 more than Margo's bill. What was the total cost for all three dinner bills?

A. $83.04

B. $84.76

C. $85.52

D. $86.38

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 7

SET B

1. Which values are less than $\frac{7}{15}$?

- ☐ $\frac{9}{20}$
- ☐ $\frac{4}{9}$
- ☐ 9.5×10^{-2}
- ☐ 0.47
- ☐ 8%

2. Which expression represents the product of a number n and -2, subtracted from 13?

A. $13-(-2n)$

C. $-2n-13$

B. $13-\left(\frac{n}{-2}\right)$

D. $\frac{n}{-2}-13$

3. Evaluate the expression below.

$$\frac{-42-(-6)+8}{-|-4|}$$

A. -7

B. -10

C. 7

D. 10

4. Which is equivalent to $\left(\frac{3^3}{8^2}\right)^3 + (-5)^2$?

A. $\frac{9}{16} \cdot \frac{9}{16} \cdot \frac{9}{16} + -5 \cdot 5$

B. $\frac{27}{64} \cdot \frac{27}{64} \cdot \frac{27}{64} + -5 \cdot 5$

C. $\frac{9}{16} \cdot \frac{9}{16} \cdot \frac{9}{16} + (-5) \cdot (-5)$

D. $\frac{27}{64} \cdot \frac{27}{64} \cdot \frac{27}{64} + (-5) \cdot (-5)$

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 8

SET A

1. Which value is greater than 8.5%?

A. 0.0009

B. 0.12

C. 0.0475

D. 0.0086

2. Simplify the expression below.

$$7k - 10 + 2k - 2$$

3. If $m = -6 - (-2)$, find the value of the expression below.

$$m^2 - 5m$$

A. -4

B. 104

C. 24

D. 36

4. The value of a stock opened at -4 points. After 8 hours, the value of the stock was -52 points. What was the average change in the value of the stock each hour?

A. 6 points per hour

B. 8 points per hour

C. -6 points per hour

D. -8 points per hour

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 8

SET B

1. Which value has an absolute value greater than $\frac{7}{3}$?

A. $-\frac{12}{5}$

B. $-\frac{15}{8}$

C. $\frac{9}{4}$

D. $\frac{11}{6}$

2. Find the value of the expression below.

$$25.6 - 7.8 \div 0.4$$

A. 5.8

B. 6.1

C. 42.9

D. 44.5

3. Justin bought 9 bags of trail mix, with $4\frac{2}{3}$ cups of trail mix in each bag. If he is equally placing the trail mix into 12 bowls, how many cups of trail mix will go in each bowl?

A. $2\frac{3}{4}$ cups

B. $2\frac{7}{9}$ cups

C. $3\frac{1}{2}$ cups

D. $3\frac{1}{3}$ cups

4. Which expression is equivalent to the phrase "the quotient of n less than 7, and 4"

A. $\frac{n}{4} - 7$

B. $7 - \frac{n}{4}$

C. $\frac{n-7}{4}$

D. $\frac{7-n}{4}$

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 9

SET A

1. Which values when placed in the box will make the value of the expression negative? Check all that apply.

$$-7 - \boxed{?}$$

☐ -15	☐ -7	☐ -3
☐ 0	☐ 5	☐ 15

2. Find the value of the expression below when $r = 5$ and $s = -2$.

$$r^2 + 8rs - s^2$$

A. -51

B. -59

C. -66

D. -74

3. Write the expression below in factored form.

$$16k + 72$$

4. In which list are all values greater than $\frac{5}{12}$?

A. $\left\{\frac{11}{25}, 0.9\%, \frac{3}{10}\right\}$

B. $\left\{5\times10^{-2}, 0.42, \frac{3}{8}\right\}$

C. $\left\{\frac{3}{5}, 8\%, \frac{9}{20}\right\}$

D. $\left\{1.2\times10^{1}, \frac{4}{9}, \frac{7}{16}\right\}$

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 9

SET B

1. Travis bought b bags of mulch at \$7 each and used a \$5 coupon off his order. Which expression represents the total cost?

A. $7(b - 5)$

B. $7 - 5b$

C. $7b - 5$

D. $7b + 5$

2. Kara lives $\frac{13}{20}$ miles from the bus stop. Her friend Liam lives $\frac{5}{8}$ miles from the bus stop. Which statement is true?

A. Kara lives $\frac{1}{40}$ miles closer to the bus stop.

B. Liam lives $\frac{1}{40}$ miles closer to the bus stop.

C. Kara lives $\frac{3}{40}$ miles closer to the bus stop.

D. Liam lives $\frac{3}{40}$ miles closer to the bus stop.

3. Carole has 84 ounces of blue paint and 192 ounces of yellow paint that she is mixing into bowls to create green paint. What is the greatest number of bowls she can use if the green mixture in each bowl is the same?

A. 8

B. 12

C. 16

D. 24

4. Which expression is equivalent to $a + a + b + b + c + c$?

A. $2abc$

B. $a^2 + b^2 + c^2$

C. $2(a + b + c)$

D. $a^2b^2c^2$

MATH 7 REVIEW

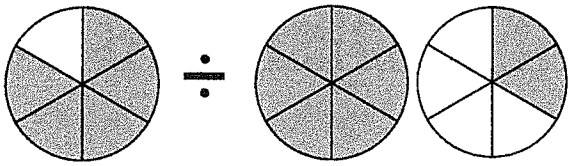
Name: _____

Date: _____ Per: _____

WEEK 10

SET A

1. Find the value of the expression illustrated below.



A. $\frac{5}{8}$

B. $\frac{9}{10}$

C. $1\frac{3}{5}$

D. $1\frac{1}{9}$

2. Which expression represents the phrase "the sum of 7 and n cubed"?

A. $3n + 7$

B. $7n^3$

C. $3(n + 7)$

D. $n^3 + 7$

3. Which statement is true?

A. $4^7 \cdot 4^5 = 4^{35}$

B. $8^6 + 8^6 = 8^{12}$

C. $11^4 \cdot 11^9 = 11^{13}$

D. $2 \cdot 3^7 = 6^7$

4. Find the value of the expression below.

$$(-15 - 3) \div -3 + 5$$

A. -1

B. -6

C. 11

D. 9

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 10

SET B

1. Which decimal is equivalent to 0.75%?

A. 0.0075

B. 0.075

C. 0.75

D. 7.5

2. Which value is furthest from the absolute value of -5 on the number line?

A. 14

B. 0

C. -2

D. -7

3. Which two expressions have a sum of $8x - 17$?

☐ $5x - 15$	☐ $-3x + 2$
☐ $11x - 15$	☐ $3x + 2$
☐ $5x - 13$	☐ $-3x - 2$

4. Find the value of the expression below.

$$(-4)^3 - 9^2$$

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 11

SET A

1. Which number is not divisible by 4?

A. 372

B. 436

C. 552

D. 686

2. Simplify the expression below.

$$(9x^4)^2$$

A. $18x^8$

B. $81x^8$

C. $18x^{16}$

D. $81x^{16}$

3. When simplifying the expression below using the order of operations, which operation should be performed first?

$$48 \div (16 - 10 + 2) \cdot 3^2$$

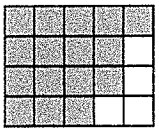
A. $10 + 2$

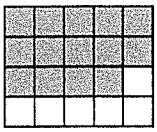
B. $48 \div 16$

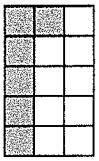
C. $16 - 10$

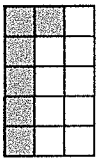
D. 3^2

4. Which statement is true regarding the shaded region of each diagram?

A.  $= \frac{3}{4} = 75\%$

C.  $= \frac{3}{4} = 75\%$

B.  $= \frac{2}{5} = 4\%$

D.  $= \frac{2}{5} = 40\%$

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 11

SET B

1. Which expression when placed in the box below will make the statement true?

$$\frac{\boxed{?}}{8m^3} = 4m^6$$

A. $12m^9$

B. $32m^9$

C. $12m^{18}$

D. $32m^{18}$

2. A piece of fabric that is $15\frac{1}{4}$ inches wide is cut into 3 strips of equal width. Then, $1\frac{3}{4}$ inches is trimmed off each strip. How wide are the final strips?

A. $2\frac{3}{4}$ inches

B. $2\frac{2}{3}$ inches

C. $3\frac{1}{3}$ inches

D. $3\frac{1}{2}$ inches

3. Which expression is equivalent to the expression shown below?

$$(7n - 9) - \frac{1}{2}(7 - 4n) + \frac{3}{2}$$

A. $9n - 11$

B. $9n - 14$

C. $5n - 11$

D. $5n - 14$

4. Ben is making a total of n wooden frames. If he has made two-thirds of them so far, which expression represents the number of frames he has left to make?

A. $n - \frac{2}{3}$

B. $n - \left(n - \frac{2}{3}\right)$

C. $\frac{2}{3}n - n$

D. $n - \frac{2}{3}n$

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 12

SET A

1. What value of k makes the equation true?

$$k + 7 = -11$$

$k =$ ☐

2. Which is twice the value of 9×10^{-3}?

A. 1.8×10^{-6}

B. 1.8×10^{-3}

C. 1.8×10^{-2}

D. 1.8×10^{-1}

☐

3. Which numbers are perfect squares? Check all that apply.

☐ 169	☐ 256	☐ 325
☐ 200	☐ 284	☐ 361

4. Which expression is equivalent to $\frac{1}{2}(6x + 4)$?

A. $\frac{1}{2} + 6x + 4$

B. $6\frac{1}{2}x + 4\frac{1}{2}$

C. $3x + 4$

D. $3x + 2$

☐

MATH 7 REVIEW

Name: _____

Date: _____ Per: _____

WEEK 12

SET B

1. What is the quotient of the absolute value of -18 and -3?

A. -6

B. 6

C. -54

D. 54

☐

2. Which is an example of the inverse property of multiplication?

A. $7 \cdot 0 = 0$

B. $-3(3) = -9$

C. $\frac{2}{3} \cdot \frac{3}{2} = 1$

D. $-(-4) = 4$

☐

3. Simplify the expression below.

$$9x^2 \cdot 2x^4 + 8x^6$$

A. $19x^6$

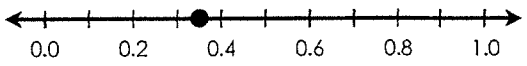
B. $26x^6$

C. $26x^{12}$

D. $26x^{14}$

☐

4. Which value is less than the value marked on the number line below?



A. 9%

B. $\frac{11}{25}$

C. 20×10^{-1}

D. $\frac{2}{5}$

☐