Incoming 8th grade Math Summer Assignment

Sebastian Middle School

Summer 2016

2955 Lewis Speedway, St Augustine, FL 32084

Congratulations on making it through 7th grade. We are so excited to have you as a Sebastian Eagle for one more year. At Sebastian, we believe it is important to practice our math skills over the summer so that we are ready for the next school year. Student mastery of the basic math skills is as important to success in future mathematical procedures and reasoning as learning the alphabet is to reading and writing. In addition to the summer assignment, please be sure to review the following math concepts to prepare for 8th grade math:

- Multiplication (up to 12's)
- Adding & Subtracting Integers
- Multiplying & Dividing Integers
- Find the prime factorization of numbers from 2 through 50, express in exponential notation. Ex. $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3^1$
- Multiply and divide by 10's, 100's and 1,000's using mental math.
- Solving 2 step equations and proportions
- Identifying numbers as rational numbers, irrational numbers, integers, whole numbers, and natural numbers.

You can practice any math skill on your IXL account this summer; your account information will expire in August 2016. We challenge you to try to complete as many skills as you can with a 75% smart score or higher!

If you need another copy of the math assignment you can go on Sebastian's website at http://www-sms.stjohns.k12.fl.us/curriculum/sebastian-summer-learning/ and print another copy. This packet will be due to your math teacher the first week of school. Should you have any questions, please feel free to contact Mr. McCoy at tracy.mccoy@stjohns.k12.fl.us.

Thank you,

Sebastian Math Department

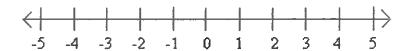# Incoming 8th grade Math Summer Assignment
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Student Name: _____

1. The word, simplify, means: _____

2. Use the order of operations to simplify the following expressions:

       (A) $11 \times 11 - 6 \times 17 + 4$ (B) $2 - 1 + 5 \times 4 \times 11$

3. Determine the meaning of the following words:

- Product: _____

- Quotient: _____

- Sum: _____

- Difference: _____

- Equation: _____

- Rational Number: _____

- Irrational Number: _____

- Integer: _____

- Whole Number: _____

- Natural Number: _____

- Proportion: _____

4. Check all the different ways $-\frac{1}{8}$ can be identified:

_____ rational number

_____ irrational number

_____ integer

_____ whole number

_____ natural number

5. Check all the different ways $\sqrt{2}$ can be idenfied:

_____ rational number

_____ irrational number

_____ integer

_____ whole number

_____ natural number

6. What is $\frac{4}{9}$ written as a decimal? (Do not use a calculator – show work below)

7. What is $0.\overline{37}$ written as a rational number (fraction)?

8. What is the approximate value of $\sqrt{29}$?

(A) 5   (C) 9

(B) 3   (D) 6

9. Which is equivalent to $\frac{2}{15}$? (No calc.)

(A) 0.15   (B) $0.1\overline{3}$

(C) $0.1\overline{3}$ (D) $0.1\overline{5}$

10. Select all the numbers that are irrational:

_____ $1.\overline{3}$ _____ π

_____ $\sqrt{3}$ _____ $\frac{2}{9}$

11. Select all the numbers that are rational:

_____ $\frac{1}{3}$ _____ $\sqrt{2}$

_____ $-\frac{1}{2}$ _____ $\frac{10}{3}$

12. Which number is irrational?

(A) $\frac{4}{5}$ (C) $\sqrt{25}$

(B) $\frac{\sqrt{50}}{2}$ (D) $\frac{\sqrt{100}}{2}$

13. Which number is equivalent to $\frac{1}{6}$?

(A) $0.01\overline{6}$

(B) $0.\overline{16}$

(C) $0.\overline{61}$

14. Which describes the best interval to approximate the value of $\sqrt{119}$?
   (A) A number between 8 and 9.
   (B) A number between 9 and 10.
   (C) A number between 10 and 11.
   (D) A number between 11 and 12.

15. Which describes the best interval to approximate the value of $\sqrt{150}$?
   (A) 15
   (B) 13
   (C) 12
   (D) 10

16. Why is the square root of a perfect square always rational? (Explain in complete sentences, and give examples, if possible)

17. What is the best approximation of π^2?

18. Place the following numbers in the proper location on the number line.

$\sqrt{2}$, $\sqrt{3}$, $\sqrt{9}$

19. Solve: $\frac{3}{4}x + 7 = -12$

20. Solve: $-8x - 8 = 10$, and leave your answer as a fraction.

21. Tom bought a cell phone plan where he was paying a flat fee of $75 a month. Sara's plan costs $25 plus $1.50 per text message. How many text messages must Sara send to have a plan that costs the same as Tom's plan? (Set up your work as an equation)

22. Use the numbers in the box to the right:

Fill in the box to make the equation true

$$\sqrt{\square^2 + \square^2} = \sqrt{\square} = \square$$

1	35	34	3	32	6
30	8	28	27	11	7
24	23	15	16	14	19
13	17	21	22	20	18
12	26	9	10	29	25
31	2	4	33	5	36

23. Kelly paid $3.50 for 12 strawberries. If she bought 19 strawberries, and the cost was proportional, how much would it cost? (Hint: Make a proportion)

24. Kelly was looking at a blue print of an airplane. For every 1 inch on the blue print, the plane would be 5 feet. If the wing of the airplane was 2.75 inches, how many feet would it be on the actual airplane?

25. Select all of the correct equations:

_____ $\sqrt{9} = 3$ _____ $9^2 = 81$ _____ $\frac{\sqrt{81}}{\sqrt{9}} = 3$

_____ $9^2 - 3^2 = 3$ _____ $3^2 = 9$ _____ $\frac{\sqrt{9}}{\sqrt{81}} = \frac{1}{3}$

26. What is the difference between -2^2 and $(-2)^2$?

*This packet needs to be **COMPLETELY** done and ready to turn into your math teacher the first week of school! Don't forget to show all your work.*

Name_____

Adding/Subtracting Integers

Date_____ Period_____

Find each sum.

1) $(-12) + 7$

2) $(-10) + (-7)$

3) $(-6) + 12$

4) $8 + 7$

5) $3 + 4$

6) $(-45) + 9$

7) $(-1) + (-46)$

8) $(-30) + 10$

9) $(-34) + 50$

10) $38 + (-5)$

Find each difference.

11) $2 - (-2)$

12) $(-1) - 10$

13) $8 - 7$

14) $(-8) - (-6)$

15) $11 - 4$

16) $48 - (-31)$

17) $18 - 41$

18) $(-38) - 30$

19) $(-1) - (-3)$

20) $(-1) - (-40)$

Evaluate each expression.

21) $(-10) - 47$

22) $(-29) - 29$

23) $13 + (-29)$

24) $38 + 22$

25) $(-32) - 44$

26) $(-12) + (-11)$

27) $2 + 15 + 4$

28) $16 + (-13) + 5$

29) $2 - (-9) - 8$

30) $10 + 3 - (-8)$

Name_____

Multiplying and Dividing Positives and Negatives

Date_____ Period____

Find each quotient.

1) $\dfrac{10}{5}$

2) $\dfrac{-24}{12}$

3) $\dfrac{-20}{-2}$

4) $\dfrac{-300}{-20}$

5) $\dfrac{65}{5}$

6) $\dfrac{-66}{-6}$

7) $\dfrac{75}{-15}$

8) $\dfrac{-56}{-14}$

9) $\dfrac{102}{-17}$

10) $\dfrac{-72}{-4}$

11) $153 \div 17$

12) $12 \div -3$

13) $48 \div 6$

14) $-120 \div -20$

15) $306 \div 18$

16) $-65 \div 13$

17) $-85 \div -17$

18) $128 \div -16$

19) $-180 \div 15$

20) $234 \div -13$

Find each product.

21) -11×9

22) -7×-12

23) -8×-11

24) -6×4

25) -3×-11

26) -5×-9

27) 9×-7

28) -9×-3

29) 12×-12

30) 11×-6

31) $6 \times -5 \times 3$

32) $6 \times -1 \times 2$

33) $8 \times -6 \times -3$

34) $-3 \times 6 \times -6$

35) $(3)(3)(-1)(3)$

36) $(-3)(3)(-3)(-3)$