



# America's School of Heroes

## Middle School 137

109-15 98<sup>th</sup> Street, Ozone Park, N.Y. 11417

Tel: 1-718-659-0471 Fax: 1-718-659-4594

Laura Mastrogiovanni, Principal

Assistant Principals: Elizabeth Orsini-Fox • Mark A. Main • Zoanne Wilkins • Michael Troy • Michael Potwardski

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## Middle School 137's Math Summer Packet



Dear Students, Parents and Guardians,

Thank you for another successful year here at Middle School 137! In efforts to better prepare you for the 8<sup>th</sup> grade, we have attached your assignment for *Math*, which must be completed over the summer break.

Please all sections. Your work must be shown and if you need additional space please use a separate piece of paper.

This completed packet must be brought with you on the first day of school. The full packet is also available on our school website <http://heroesofms137.org> for you to print out. Your new math teacher will be collecting and grading your work.

We wish you a very exciting summer and look forward to your return at MS 137 on Thursday, September 7<sup>th</sup>!

*Student Name:* \_\_\_\_\_

*Class:* \_\_\_\_\_

*Parent/Guardian Signature:* \_\_\_\_\_





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### Incoming 8<sup>th</sup> Grade Summer Packet 2017

Name \_\_\_\_\_

1. Between which two integers does the value of  $\sqrt{88}$  lie?

- A 1 and 2                      C 9 and 10  
B 8 and 9                      D 87 and 89

2. The lengths in centimeters of four line segments are shown below.

$$3.12, 3.24, 3\frac{1}{4}, \sqrt{10}$$

Which list shows the lengths in order from least to greatest?

- A  $3.12, 3\frac{1}{4}, 3.24, \sqrt{10}$   
B  $3.12, \sqrt{10}, 3.24, 3\frac{1}{4}$   
C  $\sqrt{10}, 3.12, 3.24, 3\frac{1}{4}$   
D  $3.12, 3.24, 3\frac{1}{4}, \sqrt{10}$

3. What is the slope of the line described by the data in the table below?

x	-1	1	3	5
y	3	8	13	18

- A  $\frac{2}{5}$                               C  $\frac{5}{4}$   
B  $\frac{2}{3}$                               D  $\frac{5}{2}$

4. Which of the following equations represents a proportional relationship?

- A  $y = 3x$                       C  $y = \frac{3}{x}$   
B  $y = \frac{1}{2}x + 1$                 D  $y = x + \frac{1}{2}$

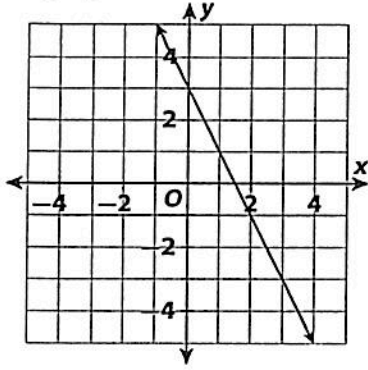
5. The points  $A(0, 0)$ ,  $B(2, 2)$ ,  $C(3, 3)$  and  $D(5, 5)$  all lie on the line  $y = x$ . Ana calculated the slopes of  $\overline{AB}$  and  $\overline{CD}$ . What can she conclude?

- A The slopes are the same.  
B The slope of  $\overline{AB}$  is greater than the slope of  $\overline{CD}$ .  
C The slope of  $\overline{CD}$  is greater than the slope of  $\overline{AB}$ .  
D The slopes of  $\overline{AB}$  and  $\overline{CD}$  are negative.

6. Annabelle's total pay varies directly with the number of hours she works. If she works 4 hours, she earns \$100. How much does Annabelle earn if she works 6 hours?

- A \$90                              C \$150  
B \$120                             D \$300

7. Which of the following is the equation of the line graphed below?



- A  $y = -2x + 3$       C  $y = -3x + 3$   
 B  $y = -2x + 5$       D  $y = -3x + 2$

8. Which equation shows the relationship in the table below?

$x$	5	8	9	11
$y$	10	16	18	22

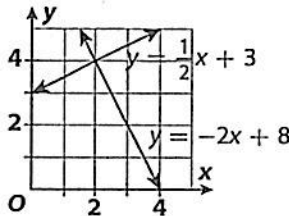
- A  $y = 2x$       C  $y = 2x + 1$   
 B  $y = 3x$       D  $y = 3x + 3$

9. Carmen are traveling at the same speed. Tonya drives 4 hours. Carmen drives another half hour and goes 15 more miles.

Which equation can be solved to find how fast the cars are going?

- A  $4x + 15 = 4.5x$   
 B  $4x + 15 = 3.5x$   
 C  $2.5x + 15 = 4x$   
 D  $4.5x + 25 = 4x$

10. What is the solution of the system of equations graphed below?



- A  $(-1, 1)$       C  $(2, 2)$   
 B  $(2, 4)$       D  $(0, 3)$

11. Ben's Bikes charges \$15.50 per hour to rent a bicycle and helmet. Cathie's Bike Shop charges \$9.25 per hour for the bike and a flat fee of \$12.50 for the helmet rental. For what number of hours are the total charges at both shops the same?

- A 1 h    B 2 h    C 3 h    D 4 h

12. Tania analyzed the relationship between student test scores and the number of hours studied. She calculated the trend line to be  $y = 6.8x + 60$ , where  $x$  is the number of hours studied and  $y$  is the score. Which is closest to the score for a student who studied 3 hours?

- A 80      C 90  
 B 85      D 95

13. Simplify  $\frac{1}{3}(9a + b) - \frac{1}{2}(4a + 2b)$ .

- A  $a - \frac{2}{3}b$       C  $2a + \frac{1}{2}b$   
 B  $a + \frac{1}{3}b$       D  $2a - b$

14. What is the greatest integer that satisfies the inequality  $3x - 4 \leq 8$ ?

- A 4      C 6  
 B 5      D 7

15. Which of the following equations represents the linear relationship shown in the table below?

$x$	2	3	4	5
$y$	7	9	11	13

- A  $y = 2x - 3$   
 B  $y = 2x + 3$   
 C  $y = 3x - 2$   
 D  $y = 3x + 2$

16. Which equation represents the data shown in the table below?

Fence Length ( $y$ )	100	150	180	240
Number of Posts ( $x$ )	11	16	19	25

- A  $y = 10x - 1$   
 B  $y = 10(x - 1)$   
 C  $y = 10x + 1$   
 D  $y = 10(x + 1)$

20. What is the value of  $n$  in the equation:

$$8n + 9 = -n?$$

- A  $-1$   
 B  $-\frac{7}{9}$   
 C  $1$   
 D  $17$

17. Which expression is equivalent to  $14x - 21y$ ?

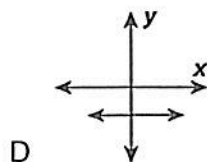
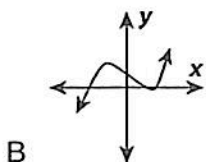
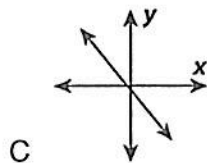
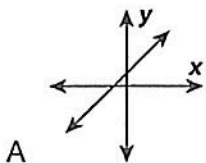
- A  $7(2x - 21y)$   
 B  $7(2x - 3y)$   
 C  $7x(2 - 3y)$   
 D  $7y(2x - 3)$

18. Which equation shows the relationship in the table below?

$x$	3	4	5	6
$y$	9	12	15	18

- A  $y = x$                       C  $y = 3x$   
 B  $y = 2x$                       D  $y = 4x$

19. Which of the following graphs does **not** show a linear relationship?



Short/ Extended Response:

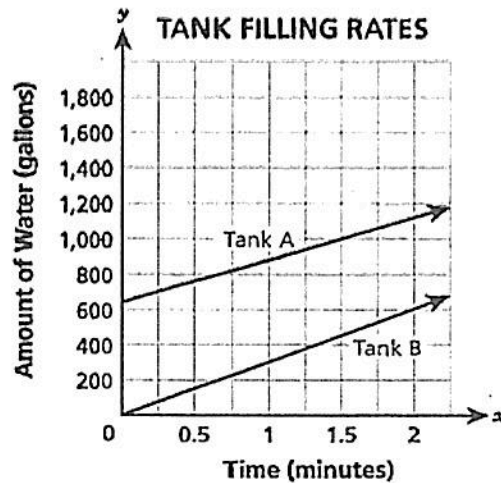
2 Point Question

21. Ms. Hernandez has \$100 to spend on parking and admission to the zoo. The parking will cost \$7, and the admission tickets will cost \$15.50 per person, including tax. Write and solve an equation that can be used to determine the number of people that she can bring to the zoo, including herself.  
*Show your work.*

Answer \_\_\_\_\_ people

3 Point Question

22. The lines graphed below show the amounts of water in two tanks as they were being filled over time.



For each tank, explain whether or not there is a proportional relationship between the amount of water, in gallons, and the time, in minutes. If there is a proportional relationship, identify the unit rate. Use specific features of the graph to support your answer.

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