Name:_____

Monarch Academy

2017-2018 MGA Grade 7 Summer Math Packet

Dear Students and Parents:

The purpose of this packet is to review math concepts as you look forward to 7th grade math next year. All concepts in this packet have been previously covered in 6th grade. Please use this summer(August!) to assure all pre-requisite concepts have been understood. This packet will be checked for completion during the first week back in September. Show all your work for each problem. Have a wonderful summer!

Helpful Videos can be found at: www.symbaloo.com/mix/summerworkextrahelp

A. Operations with Integers

Evaluate each expression.

Remember that when you minus a negative it becomes addition, - (-) = +.

1. -8 – (-5) =
2. 12 – 18 =
3. -7 – 12 + 5 =
4. –(-4) + 8 =
5. 10 – (-4) =
6. -9 – 12 – (-15) =
7. 18 – (-20) =
8. -45 ÷ 5 =
9. $-\frac{36}{12}$ =
10. $\frac{4}{4}$ =
11. 15 – 13 – (-9) =
12. -6/-3=

For #13-18, Substitute the given value for the variable and evaluate. $x = -2$, $y = -5$

13. $x + y$ =
14. $y - x$ =
15. $2x + 3y$ =

16. $2x+ 3x +1 =$

17. $x + y + 3x =$

18. $3 + 2y - 6y =$

Combining Like Terms

19. $2(x+ y) + x$

20. $-2x + 4x + 17x$

21. $-3(1+ x - y) + 2$

Order of Operations

22. $10 \div 2 - 4^2$

23. $125- (8 + 4)^2$

24. $(9+4) \div 3 + 2^2$

25. $3^2 + (18 \div 3 \cdot 3) \div 9$

26. $30 - 3(15 - 12)^2$

27. $5[6 + 4 - 8]^3 - 12$

28. $3(4 + 7) - 4^2$

29. $15 \div 5 \cdot 7 - 18$

30. $6 + 4(7 - 4) \div 6$

B. Solving Equations: Here is an example: *The check is a required step!*

Solve the equation. Must solve using either fact family method or doing work to both sides. Include a check.

Work to Both Sides		**Check:**
$5x - 3 = 12$ $+3 \quad +3$ $\frac{5x}{5} = \frac{15}{5}$ $x = 3$		Does $5(3) - 3 = 12$? $15 - 3 = 12$ $12 = 12$ ✓

31. $\frac{3}{4}x = 2\frac{1}{3}$

32. $2x + 4 = 28$

33. $-3x - 15 = 15$

34. $\frac{2}{7}x = \frac{2}{3}$

35. $6x - 12 = 48$

36. $x + 5.5 = 7.2$

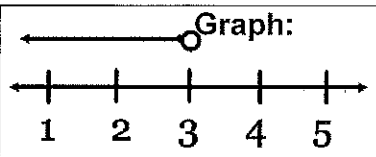
37. $2x + 1.5 = 3.7$

38. $3x + 1.5 = 10$

39. $3x + 7 = 19$

C. ***Solving Inequalities:*** Here is an example:

Solve the inequality. Must solve using either fact family method or doing work to both sides. Graph your solution.

Work to Both Sides		Graph:
$5x - 3 < 12$ $+3 \quad +3$ $\frac{5x}{5} < \frac{15}{5}$ $x < 3$		

40. $3x-12 \leq 9$

41. $5x + 7 > 32$

42. $6x - 3 < 15$

D. ***Proportional Relationships***

Evaluate the ratio of y to x. Fill in the missing parts in the table if necessary.

43.

x	y
1	5
2	10
3	
4	20

44.

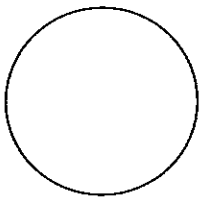
x	y
3	2
6	4
9	6
12	8

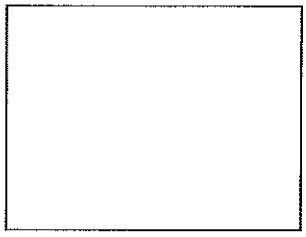
45.

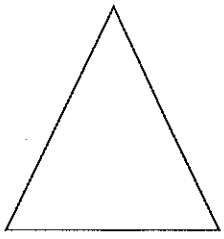
x	y
2	1
4	2
10	
20	10

E. ***Area and Volume***

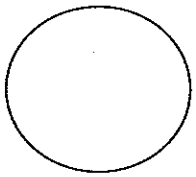
For #46- 48 State the equation that would be used to find the area of the given shape.

46. 

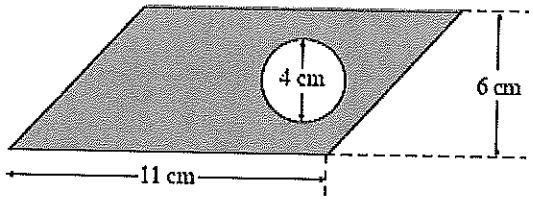
47. 

48. 

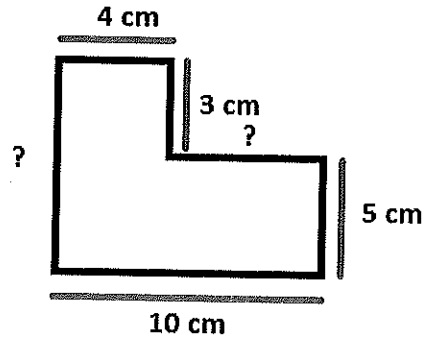
49. Find the surface area and circumference of a circle with a radius of 5m.



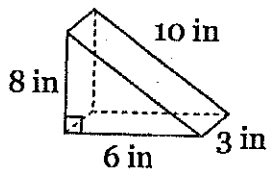
50. Find the area of the shaded section.



51. Find the surface area of the compound shape below.



52. Find the surface area of the triangular prism.



F. Statistics

For #s 53 – 57, use the following set of data: **5, 7, 8, 3, 5, 3, 10, 2, 5, 8**

53. Find the mean.

54. Find the median.

55. Find the mode.

56. Find the range.

57. What is the difference between the mean and median?

G. Translating Expressions and Equations

Translate each sentence into an equation. Define your variables with a *let* statement. Solve for the variable if applicable.

Example 1: The art club is ordering T-shirts. Each shirt costs $5.
Let *s* represent the number of shirts ordered
Let *c* represent the total cost of the order
C= 5s ***not enough information to solve***

Example 2: Janiya spends $60 to buy 3 pairs of shoes.
Let *s* represent the number of shoes purschased.
$\frac{60}{3} = \frac{3s}{3}$ ***enough information to solve***
20 = s which means, each pair of shoes costs $20.

58. The cost in dollars is equal to 16 times the number of people.

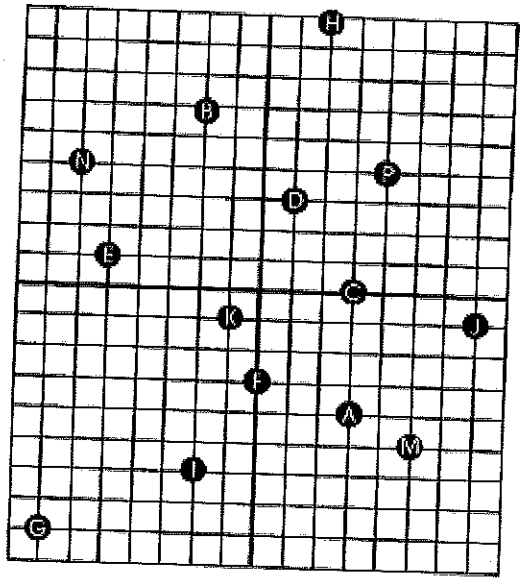
59. Sales tax is 7% of the total purchase.

60. Deanna has $150 in her account. At the end of each week, she plans to take $15 out of her account for her spending money. Write an equation to show the relationship between the number of weeks and the balance in the account.

61. 40 miles per hour for a given number of hours must equal 350 miles.

H. Coordinate Pairs

Use the accompanying graph grid to answer the following questions:



State the coordinates of the indicated point:

(1) A _____

(2) I _____

(3) H _____

(4) C _____

(5) E _____

(6) N _____

Name the *letter* of each ordered pair:

(7) (-2, 6) _____

(8) (0, -3) _____

(9) (5, -5) _____

(10) (-1, -1) _____

(11) (-7, -8) _____

(12) (7, -1) _____

(13) Where the x- and y-coordinates are equal

(14) Where the y-coordinate is three times the value of the x-coordinate

Name the *quadrant* or the *axis* on which each point lies:

(15) (-4, 3) _____

(16) (0, 6) _____

(17) (4, -2) _____

(18) (-1, -1) _____

(19) (-2, 0) _____

(20) (1, 2) _____