7th Grade Advanced Pre-Algebra Math Summer Assignment

The purpose of this summer assignment is to review and strengthen mathematical skills essential for success in Pre-Algebra. The assignment consists of math concepts taught in previous Math classes you have taken. It is expected that you will complete this assignment on your own, to the best of your ability, and bring it with you to the class the **FIRST day** of school.

You will be tested on the concepts of this packet within the first few days of school. All answers have been posted as an additional file for your reference. You should come prepared, ready to go, with specific questions for your teacher.

TUTORIAL HELP SITES: if you have difficulty, the following websites provide tutorials and videos to assist as you review:

https://www.khanacademy.org/ (7th Grade Mission Foundations skills)

http://www.purplemath.com/

Advanced Pre-Algebra Summer Packet

1. Which symbol makes the statement true?

$-(-8) \bigcirc 8$

2. Which day was the coolest?

Day	Depth
Monday	−5°C
Tuesday	−2°C
Wednesday	−8°C
Thursday	−12°C

3. Which number is closest to zero on the number line?
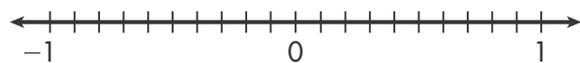
A $-\frac{1}{3}$

B $\frac{1}{4}$

C 0.3

D 0.50

4. Which statements are true? Choose all that apply.

A 8°F > 6°F

B 4°F > −5°F

C 4°F < −6°F

D −6°F > −8°F

5. The temperature at noon was −2°F. At 3:00 P.M. the temperature had dropped by 9°F. What was the temperature at 3:00 P.M.?

6. Julian's checking account balance is $−43.68. Which statements are true? Choose all that apply.

A Julian's debt is greater than $40.

B Julian's debt is less than $50.

C Julian has a negative balance in his account.

D Julian has enough money in his account to withdraw $20.

7. Which of the following statements are true? Choose all that apply.

A $|-20| + |-30| = 50$

B $|-20| = 20$

C $-|-20| = -20$

D $|-20| = -20$

Use the graph for Questions 8–13.
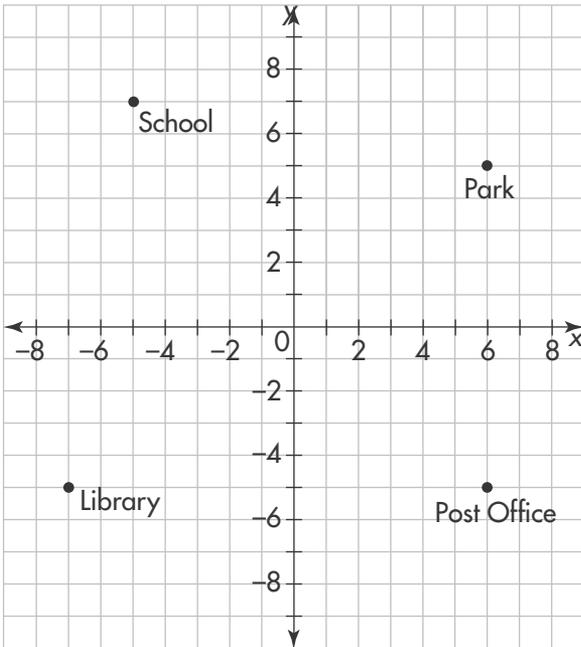
1 unit = 1 block

8. What ordered pair names the location of the library?

9. What is the distance from the park to the post office?

10. Which of these is equal to the number of blocks from the library to the post office? Choose all that apply.
A $|6| + |\text{-}7|$
B $7 + \text{-}6$
C $7 + 6$
D $\text{-}|7| + 6$

11. Which two places are the same distance from (0, 0)?

A the library and the post office
B the post office and the park
C the library and the park
D the school and the post office

12. If the bank is located at (- 3, 4), which quadrant is it in?

13. If the point (3, 5) is reflected across the x-axis, what are the coordinates of the reflected point?

14. Evaluate $5 + 2 \times 3^2 + 4$.

15. Evaluate the expression $3x + 21$ for $x = 3$.

16. Evaluate the expression $12t - 8$ for $t = 2$.

17. Leo is 13 years old. His sister, Isabel, is *n* years younger than Leo. Which expression could be used to find Isabel's age, in years?

18. Which expressions are equivalent to $2(9 + 4)$? Choose all that apply.
A $2(9) + 2(4)$
B $2(13)$
C $18 + 8$
D 22

19. Which expressions are equivalent? Choose all that apply.
A $3(5x + y)$ and $15x + y$
B $12x + 6y$ and $6(2x + y)$
C $3(x + 4y)$ and $3x + 4y$
D $20x + 5y$ and $5(4x + y)$

20. Simplify the expression $2(3x + 4y)$.

21. Which statements are true for $x = 3$. Choose all that apply.

A $2x + 3 < 10$
B $2x - 3 < 4$
C $5 + 3x > 15$
D $12 - 3x > 2$

22. Movies are on sale this week for 15% off the regular price. If y represents the regular price before discount, which expression could be used to calculate the sale price of a video game?
A $y - 0.15$
B $y - 0.15y$
C $y - 15y$
D $y - 15$

23. The formula d = rt gives the relationship among distance, d, rate of speed, r, and time, t. Use the formula to find how fast you need to drive to travel 252 miles in 4.5 hours.

24. The chart shows Julie's rate of travel on each of four trips. Write an equation that could be used to represent the relationship between distance and time?

Distance (*d*) (in miles)	50	100	200	400
Time (*t*) (in hours)	1	2	4	8

25. Noreen needs to ship 9,480 candles. If 15 candles are shipped in each box, how many boxes of candles will she ship?

26. Which expressions are equivalent to 8,400 ÷ 30? Choose all that apply.

A 840 ÷ 3

B 280

C 2,800

D 84,000 ÷ 300

27. There are 344 boxes and each box can hold 24 bottles. How many bottles can fit in the boxes?

28. The soccer team wants to raise $18,920 for summer camp. How many $40 donations will they need to collect to raise the money?

29. The formula $V = s^3$, where s is a side length, can be used to find the volume of a cube. Use this formula to find the volume of a cube with $s = 2$ cm.
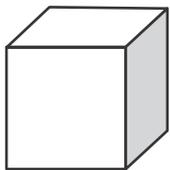
30. The formula, $A = 6s^2$, where s is a side length, can be used to find the surface area of a cube. What is the surface area of a cube in which the length of each side, $s = 1$ cm?

31. What is the greatest common factor of 16 and 20?

32. Sage travels around a go-cart track every 3 minutes. Marcus travels around it every 4 minutes, and Thomas travels around it every 6 minutes. They all start together. How long will it be until they all three get back to the start at the same time?

33. Louise is making bags of party favors. She has 16 stickers and 24 bracelets. She wants each bag to be alike, and she needs to use all of the stickers and bracelets. What is the greatest number of party bags she can make?

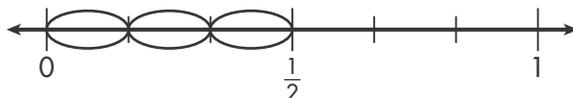**34.** Simplify the following:

$$\frac{7}{10} \div \frac{3}{5}$$

35. Point *P* can be represented by which fraction and decimal?

P

$\frac{0}{8}$ $\frac{8}{8}$

A $\frac{3}{8}$ and 0.375

B $\frac{4}{8}$ and 0.5

C $\frac{5}{8}$ and 0.75

D $\frac{6}{8}$ and 0.75

36. Kendra has 16 pints of blueberries. If she wants to divide them into half pints, how many will she have?

37. Three friends share $\frac{1}{2}$-pound of a trail mix equally. How much will each person get?

0         $\frac{1}{2}$ 1

38. Kellie's paper airplane flew 68.75 feet. Trudy's paper airplane flew 42.25 feet. How much farther did Kellie's plane fly than Trudy's?

39. What is 0.014×2.3?

40. Fred has 98.4 pounds of beans that he wants to share equally among 16 friends. How many pounds of beans will each friend get?

**41.** Which store has the best buy on brushes? What is its unit price?

Painter's Palette	
acrylic paint	2 for $7.50
brushes	2 for $5.25

| The Hobby Shop	
acrylic paint	3 for $9.79
brushes	4 for $10.99

42. A photograph that measures 5 in. wide by 7 in. high is reduced to fit into a space that is 1 in. high. Write a proportion can be used to find w, the width of the reduced photo?

43. A map has a scale of 2 cm = 5 km. The distance between two cities on the map is 31.2 cm. What is the actual distance between the cities?
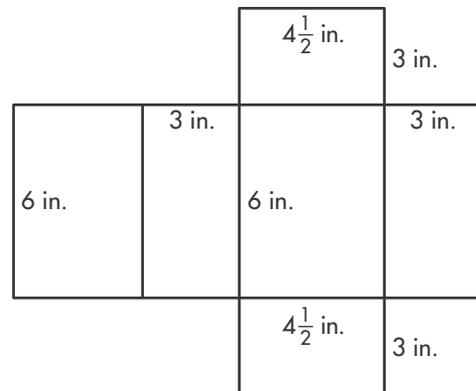
44. Jake drew this sketch of his triangular rock garden. What is the area of his rock garden?
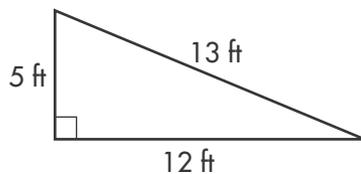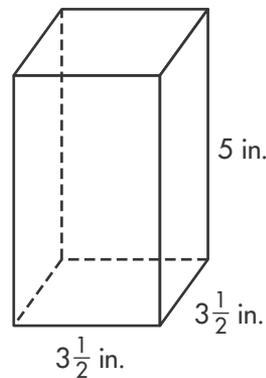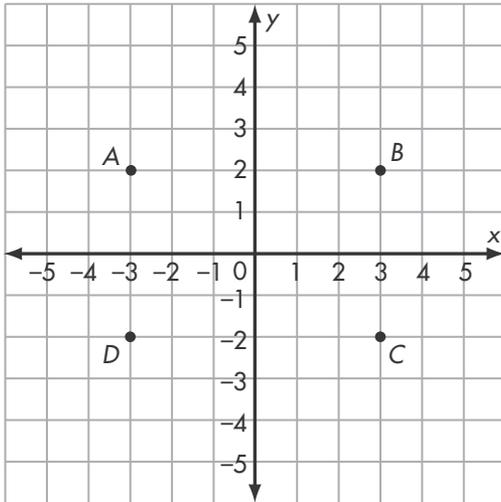

45. What is the area of the figure shown?
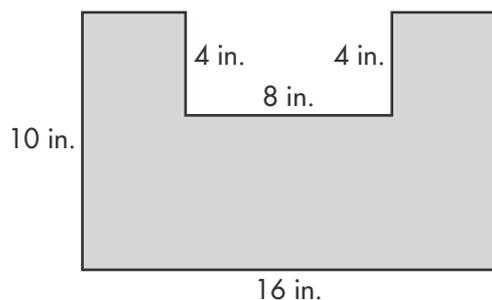
46. Courtney needs to wrap this gift box, which is $4\frac{1}{2}$ inches wide, 6 inches long, and 3 inches tall. What is the surface area of the box?

47. Emma wants to know how much milk this carton can hold. What is the volume of the rectangular prism?

48. Which is the area of ABCD?

The following represents the sizes of several bicycle tires.

17 inches, 20 inches, 21 inches, 21 inches, 23 inches, 30 inches

Use the data for Questions 49–52.

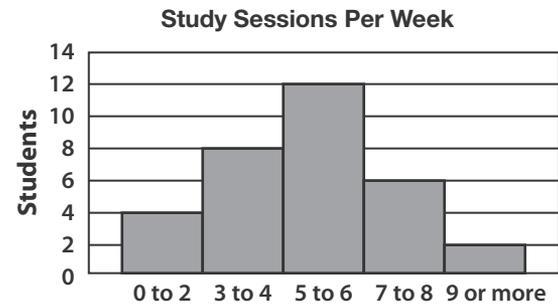**49.** What is the range of the bicycle tires sizes?

50. What is the mean of bicycle tires sizes?

51. What is the mode of bicycle tires sizes?

52. What is the median of the data set?

Use the graph for Questions 53–55.

The histogram shows the results of a survey in which students were asked how many times per week they study.

Study Sessions Per Week

53. How many times per week do the greatest number of students study?

54. What percent of the students study seven or more times per week?

55. Which of these are questions can be answered using the graph?

A How many study sessions do the students participate in each week?

B How many hours do the students spend studying each week?

C Do more students study 3 to 4 times per week or 7 to 8 times per week?

D How often do you study?

56. Which of the following is NOT affected by the exclusion of the outlier in the data set?

4, 2, 5, 2, 3, 19, 2, 4

A Mean   **C** Mode

B Median   **D** Range

57. Josie left an $8.00 tip at the restaurant. How much was her total bill, if the tip was 20% of the total?

58. How much more will it cost to buy 3 pounds of salami than 3 pounds of ham?

Derek's Deli	
Ham	$2.99 per lb
Turkey	$3.19 per lb
Salami	$3.89 per lb

59. Each pound of snack mix uses 2 ounces of peanuts, 5 ounces of raisins, and some other nuts. A batch of mix has 12 ounces of peanuts. How many ounces of raisins does it have?

Peanuts	2	4	6			
Raisins	5	10				