Summer Assignment 2024
Incoming 7th Grade

Dear Student,

This summer assignment will prepare you for success in 7th Grade math. Please complete the following exercises this summer and be prepared to submit your work by Friday September 13 to your math teacher.

This packet will be counted as the first homework assignment of the year. In order to receive full credit, all work must be shown neatly in the space provided or attached to this packet on separate sheets of paper. **NO CALCULATORS should be used when completing this packet**. Answers written with no work shown (where needed) will receive no credit. You are encouraged to work in groups to help each other, however copying is unacceptable. This packet consists of 6th grade material, so it is expected that you are coming in to this course knowing this material. You will have a quiz during the first full week of school on the material in this packet.

If you have any questions, please reach out to your math teacher or jtalewsky@bbrook.k12.nj.us.

Sincerely,

The CMS Math Department

Activity Instructions

Each problem on the following pages is worth either 1 point, 2 points, or 3 points as indicated at the top of the page. You may choose any problems you want on any page to complete for your summer work. At the end, you must have a total of **20 points** worth of problems to get full credit for this packet.

1 Point problems will be the easiest
2 Point problems will be medium difficulty
3 Point problems will be harder difficulty

Fill out the information below as a way for you to track your progress.

Problem Number Chosen	Point Value	Answer

Problem Number Chosen	Point Value	Answer

Total Points: _____

Need Help?

Check out the videos below if you need help on any of the topics in this packet.

Adding/Subtracting Fractions

Adding and Subtracting Fractions with Unlike Denominators | Math with Mr. J

Multiplying/Dividing Fractions

How to Multiply and Divide Mixed Numbers | Math with Mr. J

Adding/Subtracting Decimals

Adding and Subtracting Decimals (How to) | Math with Mr. J

Multiplying/Dividing Decimals

A Quick Review of Multiplying and Dividing Decimals | Math with Mr. J

Integers/Rational Numbers on a Number Line

Decimals and fractions on a number line | Decimals | Pre-Algebra | Khan Academy

Absolute Value

What is Absolute Value? | Absolute Value Examples | Math with Mr. J

Distance on the Coordinate Plane and Perimeter

Coordinate Grid: find area and perimeter

Write and Evaluate Algebra Expressions

Writing an Algebraic Expression for a Real-World Situation

Writing Algebraic Expressions (Two Operations) | Math with Mr. J

Simplify Algebra Expressions

An Intro to Combining Like Terms | Simplifying Expressions by Combining Like Terms | Math with Mr. J

Adding/Subtracting Equations

Solving One-Step Equations with Decimals & Fractions | Expressions & Equations | Grade 7

Multiplying/Dividing Equations

Solving One-Step Equations with Decimals | Expressions & Equations | Grade 6

Writing Equations

Writing Equations from Word Problems | MooMooMath and Science

Area of Parallelograms and Triangles

Area of Parallelograms and Triangles | The Middle Cafe

Surface Area/Volume

How to Find the Surface Area of a Triangular Prism | Math with Mr. J

One Point Tasks

1.

What is the value of

$1{,}242 \div 18$?

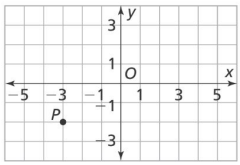
2.

Find the quotient.

$\frac{5}{4} \div 1\frac{1}{12} =$

3.

What are the coordinates of a point in Quadrant II which is 5 units away from point *P*?



4.

Two cities had low temperatures for the day of 10 and 5 degrees below zero. Write the temperature closest to zero as an integer.

5.

Write these numbers in increasing order.

$\frac{6}{3}, -\frac{3}{4}, 1.5, 0.25, -\frac{5}{4}$

6.

Check all the expressions that have a value of 13.5 when s = 1.5.

- ☐ $\frac{s}{5} + 13\frac{1}{5}$
- ☐ $21 \div s$
- ☐ $(375 \div s) - 236.5$
- ☐ $6s^2$
- ☐ s^3

7.

Evaluate the expression below.

$(4.4 + 7.6)x - (24 \div 12)x$

8.

What is the value of *t* in the following equation?

$t + \frac{1}{4} = 2\frac{7}{12}$

9.

April pays a dog-walking service $30 each week to walk her dog. Complete the table to show how many dollars, *d*, April spends on dog-walking in *w* weeks.

w	1	2			5
d	30		90	120	

10.

An animal shelter with only dogs and cats has a ratio of cats to dogs that is 9:7.

What is the ratio of dogs to all animals?

11.

What is 0.4% of 10?

12.

For each fraction, decimal, or percent, write the equivalent number from the list below.

0.68, $\frac{19}{50}$, $\frac{9}{20}$, 80%, 0.54

38% _____

$\frac{27}{50}$ _____

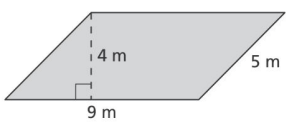
$\frac{4}{5}$ _____

0.45 _____

$\frac{17}{25}$ _____

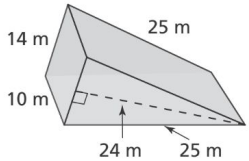
13.

Find the area of the figure below.



14.

What is the surface area of the triangular prism shown?



15.

Evaluate $2\ell + 2w$ for $\ell = 5.2$ and $w = 6.7$.

16.

Chad earned the following test scores:

75, 85, 100, 87, 80, 70, 95, 91

Would the mean, median, mode, or range show how much he improved overall?

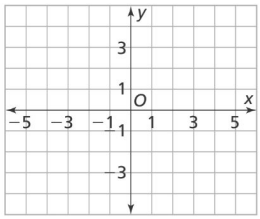
Two Point Tasks

17.

Raven is making pillows. Each pillow requires $\frac{3}{5}$ yard of fabric. Raven has of fab $6\frac{2}{3}$ yards the numbers of pillows Raven can make.

18.

Draw a polygon with vertices at $A(4, -1)$, $B(1, -1)$, $C(1, 3)$, and $D(4, 3)$. What is the perimeter, in units, of polygon $ABCD$?



19.

Write an inequality that compares one of the fractions to one of the decimals.

$$\frac{6}{3}, -\frac{3}{4}, 1.5, 0.25, -\frac{5}{4}$$

20.

Mr. Parker wants to rent a cargo van for a day. It will cost the daily fee of $50 plus $0.35 per mile driven.

Let m be the number of miles Mr. Parker drives for the day. Write an expression that shows the amount he will pay for the van.

21.

Mr. Daniels is organizing a class trip. He wants to spend less than $900. The bus rental costs $600. Mr. Daniels will also buy tickets that cost $9.50 per student.

Write an inequality to represent the number of students, y, that Mr. Daniels can bring on the trip.

22.

Mrs. Banks wants to make 44 qt of jelly with 70 lb of fruit. If each gallon of jelly needs $6\frac{1}{2}$ lb of fruit, will she have enough fruit? How much leftover fruit does she have, or how much extra fruit is needed?

23.

Jessica is buying several bunches of bananas to make desserts for a fundraiser. She can buy 10 pounds of bananas for $14.90 or 8 pounds of bananas for $12.08. Which is the better buy? Explain.

24.

All but 4 of the 50 state capitals have an interstate highway serving them. What percent of the capitals do not have interstates?

25.

Paula weeded 40% of her garden in 8 minutes. How many minutes will it take her to weed all of her garden at this rate? Explain.

26.

Write an equation to describe the pattern in the table.

a	5	6	7	8	9
b	0	1	2	3	4

27.

Caroline is making a triangular flag with a base of 10 inches. The perpendicular distance from the base of the flag to its vertex is 8 inches. What is the area of the flag?

28.

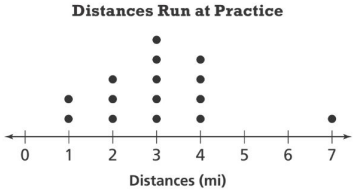
Ed's birthday is less than 16 days away. Ann writes the inequality $d < 15$, where d equals the number of days, to represent this. Is Ann correct? Explain.

29.

Eva is picking fruit at a farm. The fees are $5 for entry to the farm, $2.50 per pound of berries, and $2 per pound of apples. Let b be the number of pounds of berries and a be the number of pounds of apples. Write an expression for how much Eva will pay total for b berries and a apples.

30.

Sebby says that the mean is a better measure of center for the data below because the data are clustered together. Do you agree with Sebby's reasoning? Explain.



31.

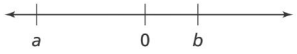
Miguel listed the ages of his cousins in years:

2, 4, 18, 2, 7, 14, 16, 7

The median of the data is _____, the third quartile is _____, and the first quartile is _____. The units of measure are _____.

32.

For the number line shown which statement is not true?



Ⓐ $|a| > b$ Ⓒ $|a| > a$

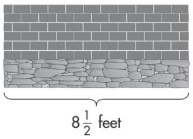
Ⓑ $-|b| < b$ Ⓓ $|a| < |b|$

Explain your reasoning.

Three Point Tasks

33.

Employees of a landscaping company built a retaining wall with area $23\frac{3}{8}$ sq ft. They used brick to make the top portion of the wall.



Suppose the area of the brick portion of the wall is $15\frac{7}{12}$ ft^2. What fraction of the wall is brick? Write an equation to show your work.

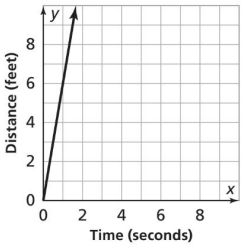
34.

At her health club, Lauren uses a treadmill every 2 days and the weight machines every 8 days. She used a treadmill on March 2 and will use the weight machines on March 8. Lauren says that the first time she will use both a treadmill and the weight machines in March is March 16 because the LCM of 2 and 8 is 16.

Does Lauren's reasoning make sense? Use an example or a counterexample to explain your analysis.

35.

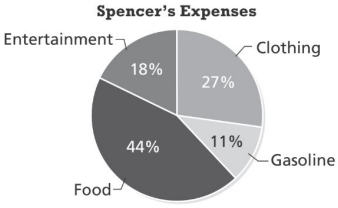
The graph shows Rudra's walk.



Use t for time and d for distance. Identify the independent and dependent variables in this situation and use them to write equation that represents his walk.

36.

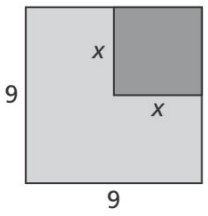
The circle graph shows how Spencer spent his money in the month of July.



If Spencer spent a total of $704.00 in the month of July, estimate the amount of money he spent on clothing, to the nearest $10.

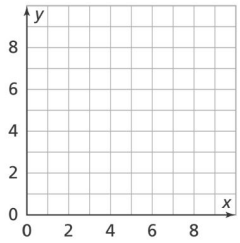
37.

Two figures are arranged as shown. Write an expression for the area shaded in light gray.



38.

Jake drew a model on grid paper of a kite that he wants to make. Each grid line represents 10 cm. His drawing has coordinates (1, 5), (3, 6), (5, 5), and (3, 0). Sketch Jake's kite, and calculate the area of the real kite.



39.

Noah wrote that $6 + 6 = 12$. Then he wrote that $6 + 6 - n = 12 - n$. Are his equations balanced? Explain.

40.

The same digits are used for the expressions 3^4 and 4^3. Explain how to compare the values of the expressions.

41.

Write and simplify an expression for the volume of a rectangular prism with length 7.5 ft, width w ft, and height 4.2 ft. What is the volume if the width is 2 ft?

42.

Large balloons are sold in packages of 12 and cost $1.50 per balloon. Each of 4 friends gets an equal share of balloons from p packages of balloons. Write an expression to represent how much each friend must pay.

43.

Jase earns $5.00 per lawn mowed and $5.00 per car washed. Let m be the number of lawns mowed and let c be the number of cars washed. Select all the expressions that could represent the total earned, E in dollars, by Jase.

- ☐ $E = 5(m + c)$
- ☐ $E = 5m + c$
- ☐ $E = 5 + mc$
- ☐ $E = 5c + m$
- ☐ $E = 5m + 5c$

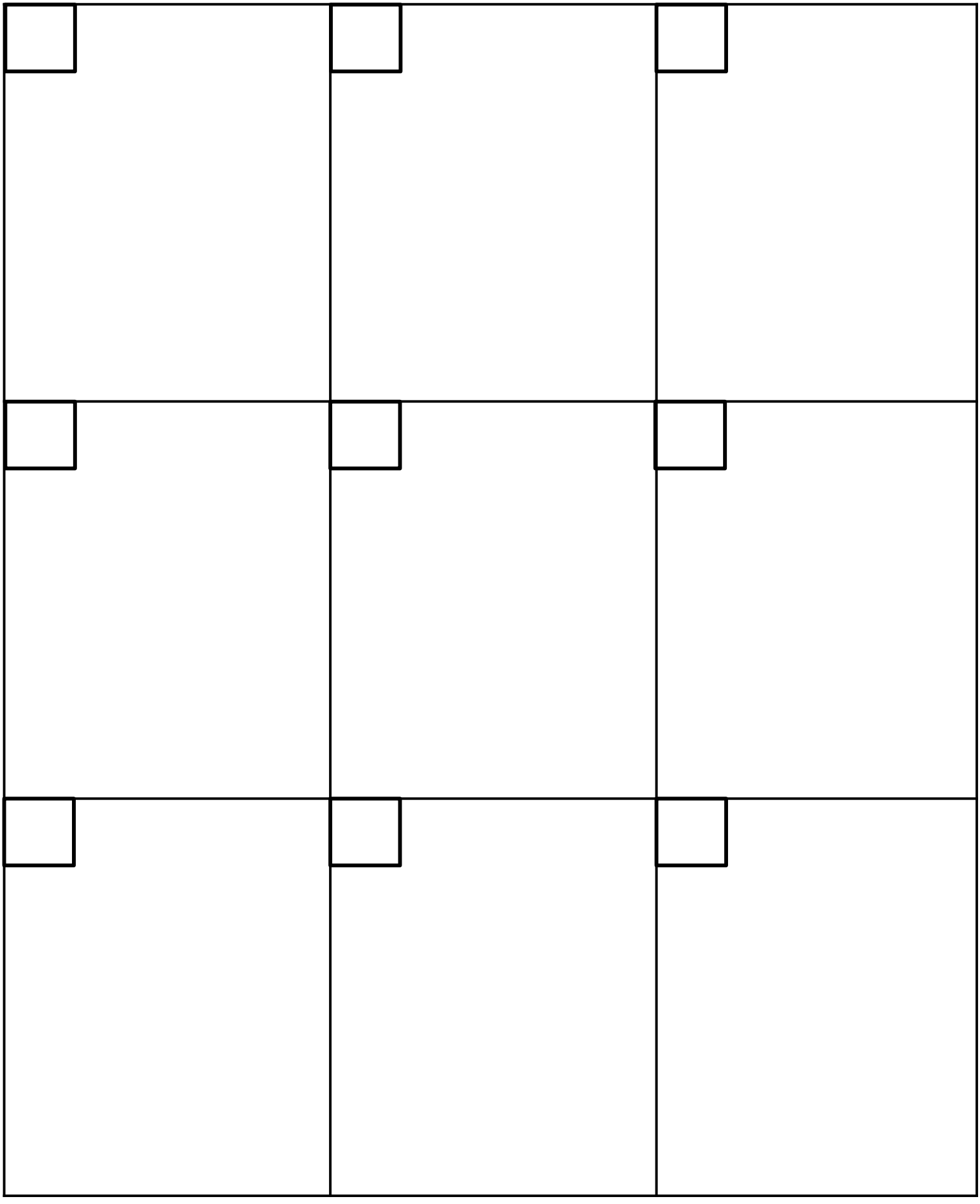
44.

McKenna kept track of the number of miles she rode her horse each day for 2 weeks.

3, 2.5, 5, 2.5, 8, 10, 4, 0, 6, 6, 2, 2, 6, 9

McKenna says that she typically rides her horse for about 6 hours because the mode is 6. Is McKenna's conclusion appropriate? Explain.

Name: _____ **Answer Sheet (Write problem number in the box)**



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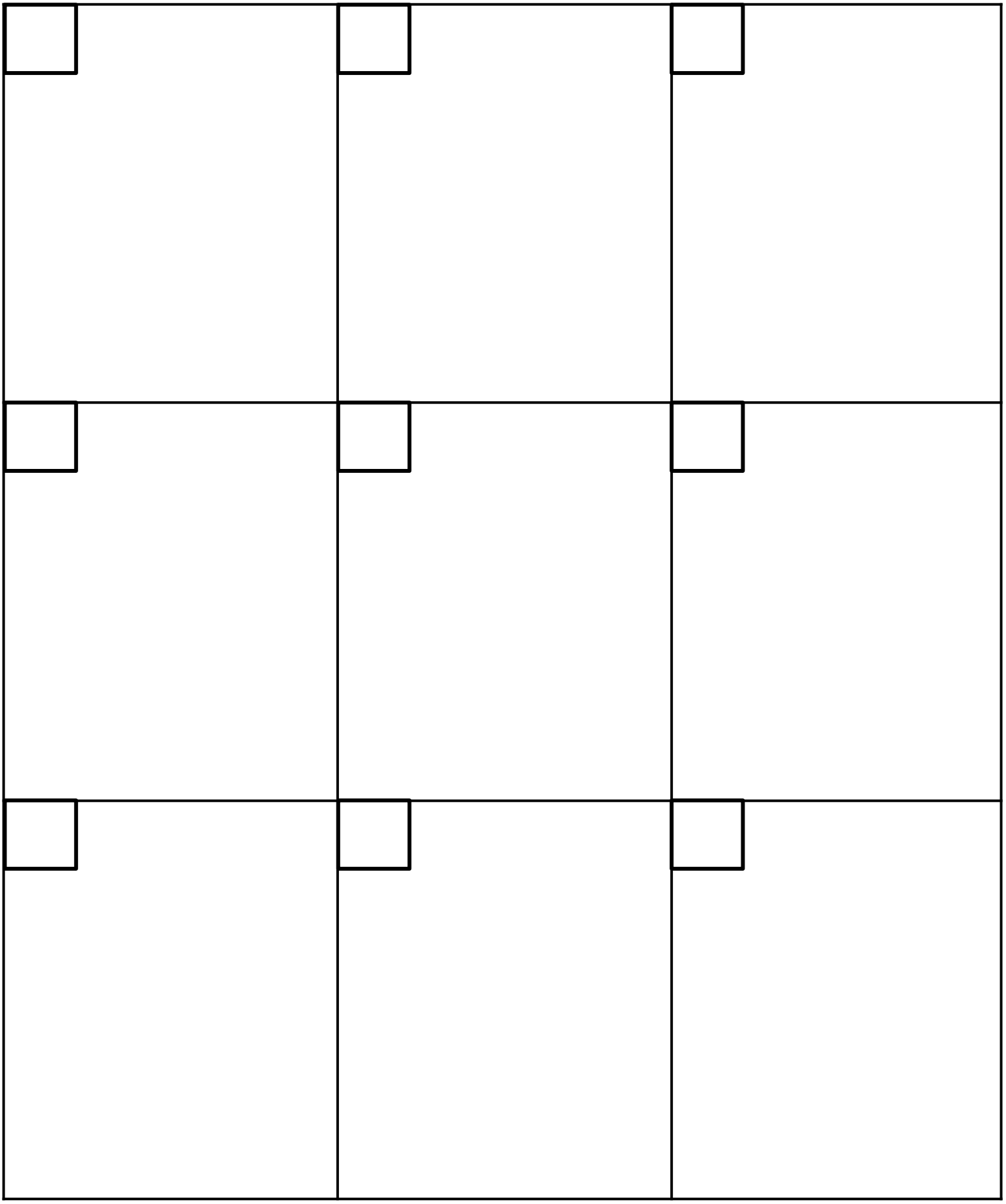

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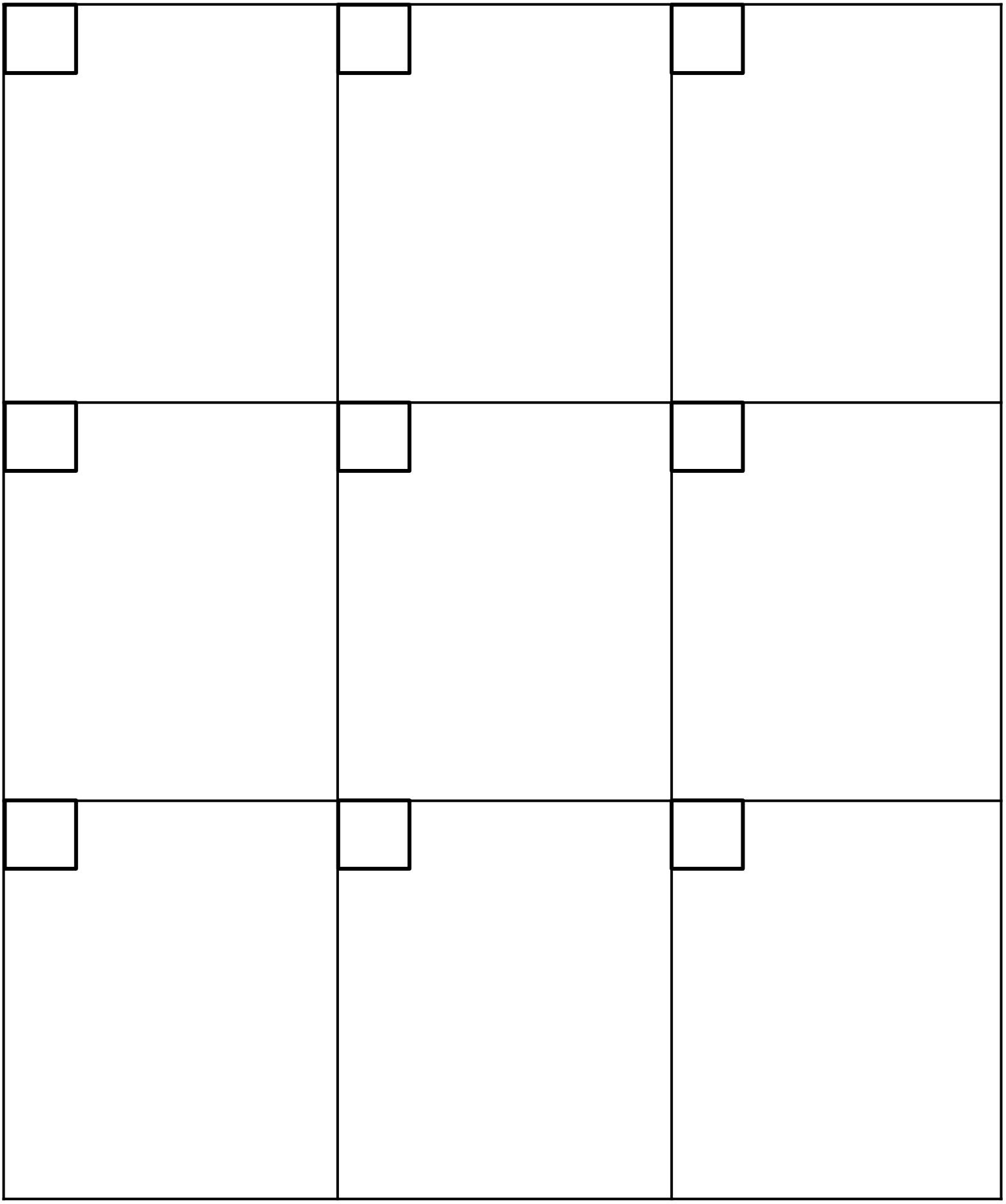

One Point Task Answers

1. 69	2. $1\frac{2}{13}$	3. $(-3, 3)$	4. -5
5. $-\frac{5}{4}$ $-\frac{3}{4}$ 0.25 1.5 $\frac{6}{3}$	6. ■ $\frac{s}{5} + 13\frac{1}{5}$ ☐ $21 \div s$ ■ $(375 \div s) - 236.5$ ■ $6s^2$ ☐ s^3	7. $10x$	8. $t = 2\frac{1}{3}$
9. w: 1, 2, 3, 4, 5 d: 30, 60, 90, 120, 150	10. $\frac{7}{16}$	11. 0.04	12. 38% $\frac{19}{50}$ $\frac{4}{5}$ 80% $\frac{17}{25}$ 0.68 $\frac{27}{50}$ 0.54 0.45 $\frac{9}{20}$
13. 45 sq. m	14. 976 m^2	15. 23.8	16. range

Two Point Task Answers

17. 11 pillows	18. **14 units**	19. **Sample answer: $-\frac{3}{4} < 0.25$; 0.25 is located to the right of $-\frac{3}{4}$ on the number line. It is the greater number.**	20. **$50 + 0.35m$**
21. **$9.5y < 300$**	22. No, she will need $1\frac{1}{2}$ lb more.	23. **10 pounds for $14.90 is the better buy.**	24. **8%**
25. **20 minutes; Sample answer: Let m represent the total number of minutes it will take Paula to weed her garden: $0.4m = 8$. Divide 8 by 0.4 to find that $m = 20$.**	26. $b = a - 5$	27. 40 in.^2	28. **No; Sample answer: The number 15 is also a possible number of days until Ed's birthday.**
29. $2.5b + 2a + 5$	30. **Sample answer: I do not agree. There is an outlier at 7 miles. Outliers affect the mean. The median, 3, is the more typical number of miles run.**	31. The median of the data is **7**, the third quartile is **15**, and the first quartile is **3**. The units of measure are **years**.	32. **D** $\lvert a \rvert < \lvert b \rvert$ **Sample Answer:** Absolute value will make the number positive, so since a is farther away from 0, |a| will be bigger than |b|.

Three Point Task Answers

33. $2\frac{3}{4}$ feet; $\frac{2}{3}$	34. No; Sample answer: Lauren's reasoning does not make sense. The LCM is 8, not 16. So, March 8 will be the first time she uses both a treadmill and the weight machines.	35. independent variable = time, dependent variable = distance; $d = 6t$
36. $210.00	37. $9^2 - x^2$	38. 1,200 cm^2
39. Yes; Sample answer: Noah subtracted the same variable from each side, so the equations are balanced.	40. Sample answer: $3^4 = 3 \times 3 \times 3 \times 3 = 81$; $4^3 = 4 \times 4 \times 4 = 64$. So, $3^4 > 4^3$.	41. $V = 7.5 \times 4.2 \times w$, or $V = 31.5w$; 63 ft^3
42. $4.5p$	43. ☑ $E = 5(m + c)$ ☐ $E = 5m + c$ ☐ $E = 5 + mc$ ☐ $E = 5c + m$ ☑ $E = 5m + 5c$	44. Sample answer: McKenna's conclusion is not accurate. The mode of her data is 6 hours, but more than half of the time she spends less than 6 hours riding her horse. It would be more accurate to say that McKenna typically rides her horse between 2.5 and 6 hours.