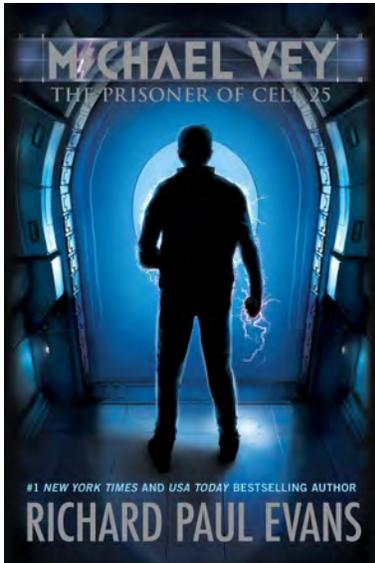


7th Grade Summer Project

You will read ONE book and complete the rising 7th grade math packet.

7th Grade Humanities

Read: *The Prisoner of Cell 25: Michael Vey* by Richard Paul Evans and complete the assignment.



My name is Michael Vey, and the story I'm about to tell you is strange. Very strange. It's my story.

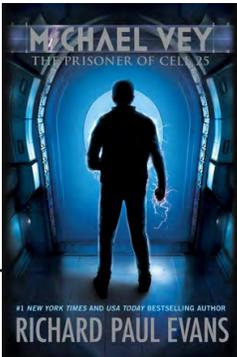
To everyone at Meridian High School, fourteen-year-old Michael Vey is nothing special, just the kid who has Tourette's syndrome. But in truth, Michael is extremely special—he has electric powers. Michael thinks he is unique until he discovers that a cheerleader named Taylor has the same mysterious powers. With the help of Michael's friend, Ostin, the three of them set out to discover how Michael and Taylor ended up with their abilities, and their investigation soon brings them to the attention of a powerful group who wants to control the electric teens—and through them, the world.

#1 New York Times bestselling author Richard Paul Evans introduces a character whose risk-filled exploration marks the beginning of a riveting new series. With only his powers, his wits, and his friends to protect him, Michael will need all his strength to survive....

Assignment for *The Prisoner of Cell 25*: Complete at least 3 activities from the attached Choice Board.

7th Grade Math

Complete the math packet. It is suggested that you complete one page per week. Bring the completed packet with you to school on Thursday, August 7.



Michael Vey Choice Board

| | | |
|---|--|---|
| <p>Create an acrostic poem using the word, "Friendship".</p> | <p>Construct an illustrated timeline of at least 8 major events in <i>Michael Vey</i>. Include a caption or short description with each drawing.</p> | <p>Create a figurative language booklet in which you collect at least 5 examples of figurative language. You must identify the type of figurative language and explain its meaning.</p> |
| <p>Choose three character traits to describe Michael. Consider his thoughts, feelings, actions, and words. Provide text evidence to support your choices.</p> | <p>Create a Quote Quilt by folding your paper into 4 sections. Write 1 important quote in each part. On the back, explain why each quote is so important.</p> | <p>If you had a special power, what would the power be? How would you use it? Would you be tempted to use it for the wrong reasons? Explain.</p> |
| <p>Research Tourette Syndrome. Create a Google Slides presentation with at least 5 facts and images. http://kidshealth.org/en/kids/k-tourette.html</p> | <p>Design a <u>new</u> book jacket for Michael Vey. Your cover must look different from the original. Don't forget to include a short summary about the book on the back of the book jacket.</p> | <p>Compare and contrast Michael and Ostin by using a venn diagram. Explain their similarities and differences in two well-written paragraphs.</p> |

Vocabulary

Choose the correct word from the vocabulary box to match the description or example.

Vocabulary

positive number
negative number
opposites
integers
inequality

1. a number sentence such as $3 < 4$ or $-5 > -10$

2. Examples are -2 , 3 , and 0 .

3. a number that is less than zero

4. a way to describe the relationship between the integers -2 and 2

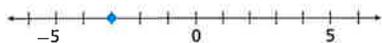
5. a number that is to the right of zero on a horizontal number line

Concepts and Skills

6. Which numbers are greater than -2 ? Select all that apply.

| | |
|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> (A) -5 | <input type="checkbox"/> (D) -2 |
| <input type="checkbox"/> (B) 3 | <input type="checkbox"/> (E) -1 |
| <input type="checkbox"/> (C) 0 | |

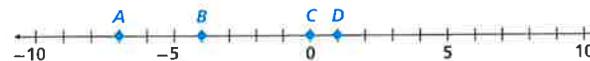
7. What integer is graphed on the number line?



8. **MP Use Tools** At 3 a.m., the temperature is -6°F . At 5 a.m., the temperature is -2°F . Is the temperature at 3 a.m. colder than the temperature at 5 a.m.? State what strategy and tool you will use to answer the question, explain your choice, and then find the answer.

9. Positive and negative numbers are used to indicate elevations. Which statement is true about the elevations 30 feet and -30 feet?
 - (A) They are both 30 feet above sea level.
 - (B) The elevations are each the same distance from sea level.
 - (C) They are both 30 feet below sea level.
 - (D) The elevation of 30 feet is farther from sea level than the elevation of -30 feet.

10. Use the number line to find the opposite of the integer for each point, and then record each opposite in the table.

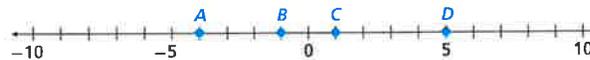


| Integer | Opposite |
|---------|----------|
| A | |
| B | |
| C | |
| D | |

11. Terri's bank statement lists two transactions, one for $-\$48$ and one for $-\$51$. Complete each statement to compare these values. Use "lesser" or "greater".

The integer -48 is _____ than the integer -51 ,
but $-\$48$ represents a _____ amount spent than $-\$51$.

12. Use the number line to find the absolute value of the integer for each point.



$|A| =$ _____
 $|B| =$ _____
 $|C| =$ _____
 $|D| =$ _____

Vocabulary

Choose the correct term from the Vocabulary box.

- the least number, other than zero, that is a multiple of two or more given numbers

- A _____ can be written in the form $\frac{a}{b}$, where a and b are integers and $b \neq 0$.
- To compare and order fractions, the fractions can be written with a _____.
- The _____ is the greatest number by which two or more given numbers can be evenly divided.

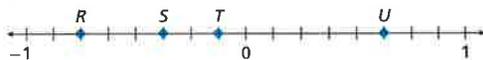
Vocabulary

- rational number
- common denominator
- least common multiple
- greatest common factor

Concepts and Skills

- A thermometer in Grand Forks, North Dakota, reads -4.5°F in January. The temperature on the same day in February has the same absolute value as the temperature in January but is not the same temperature. What is the temperature in February? _____ $^\circ\text{F}$
- MP Use Tools** What is the least common denominator for the fractions $\frac{3}{4}$, $-\frac{2}{5}$, and $\frac{3}{2}$? State what strategy and tool you will use to answer the question, explain your choice, and then find the answer.

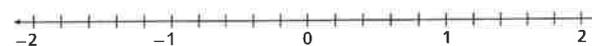
- Use the number line to match the statements to the point on the number line.



- | | |
|-----------|---------------------------------------|
| Point R • | • The absolute value is $\frac{1}{8}$ |
| Point S • | • The absolute value is $\frac{3}{4}$ |
| Point T • | • The absolute value is $\frac{3}{8}$ |
| Point U • | • The absolute value is $\frac{5}{8}$ |

- Which inequality is correct?
 (A) $-0.25 > \frac{1}{3}$ (B) $\frac{4}{5} > 0.7$ (C) $1.2 < 1\frac{1}{5}$ (D) $-2\frac{3}{4} > -2.6$

For Problems 9–11, use the number line to complete each inequality.



- $-1\frac{8}{10}$ $|-1.8|$
- $|0.4|$ $|\frac{-4}{5}|$
- $-\frac{6}{5}$ -1.3
- The city of Kuttanad, India, has an elevation of -2.14 meters. The area near the mouth of the Dniester River in Moldova has an elevation that is the opposite of the elevation in Kuttanad. What is the elevation near the mouth of the Dniester River?
_____ meters
- Which expression shows the sum of 54 and 36 as the product of the GCF and a sum of two numbers with no common factor?
 (A) $6(6 + 9)$
 (B) $18(2 + 3)$
 (C) $18(18 \div 36)$
 (D) $108(2 \div 3)$
- Finches are small songbirds. The table lists the lengths of four finches, each of a different species. Order the finches from shortest to longest.

| Finch species | Length (inches) |
|----------------|-----------------|
| house finch | $5\frac{5}{8}$ |
| indigo bunting | 4.9 |
| crimson finch | $5\frac{1}{10}$ |
| purple finch | 5.9 |

Vocabulary

Complete the following to review your vocabulary for this module.

- A rate in which two quantities are equal, but use different units, is called a(n) _____.
- A graph that uses sections of a circle to compare parts to the whole and parts to other parts is called a(n) _____.
- A comparison of two quantities by division is a(n) _____.
- How is a conversion factor like a unit rate? How are they different?

Vocabulary

circle graph
conversion factor
ratio

Concepts and Skills

- Sanjib collected information from students in the sixth grade about their favorite sport. He represented the results in a circle graph. If there are 240 students in the sixth grade, how many students preferred each type of sport?

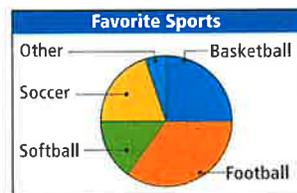
Basketball: _____

Football: _____

Softball: _____

Soccer: _____

Other: _____



- MP Use Tools** Fu Haifeng of China set a badminton world record with a smash of 332 kilometers per hour. A kilometer is about $\frac{5}{8}$ mile. What is the speed in miles per hour, to the closest whole number? State what strategy and tool you will use to answer the question, explain your choice, and then find the answer.

- Match each measurement with its equivalent measurement.

| | | |
|---------|---|---------|
| 360 in. | • | 36 ft |
| 12 yd | • | 288 in. |
| 24 ft | • | 440 yd |
| 0.25 mi | • | 10 yd |

- To convert a quantity of kilograms to pounds using a conversion factor, pounds should be the **numerator / denominator** of the conversion factor and kilograms should be the **numerator / denominator** of the conversion factor.

- 3,500 milligrams is equivalent to which of the following measurements? Select all that apply.

| | |
|-----------------------------------|-------------------------------------|
| <input type="radio"/> A 0.0035 kg | <input type="radio"/> D 35 kg |
| <input type="radio"/> B 0.35 g | <input type="radio"/> E 3,500,000 g |
| <input type="radio"/> C 3.5 g | |

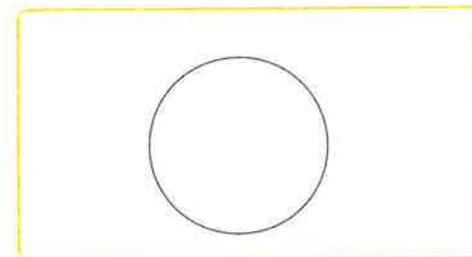
- Frieda makes a batch of punch using the recipe shown. She wants to compare the ingredients using a circle graph. Find the angle measure for each section of the circle graph.

Cranberry juice: _____ Orange juice: _____

Pineapple juice: _____ Ginger ale: _____

- Sean runs a marathon, which is 26.2 miles long. A mile is about 1.6 kilometers. What is that distance to the nearest kilometer?

- In a survey, students were asked about their favorite season. The results are shown in the table. Make a circle graph to represent the data in the table.



Fruit Punch

64 ounces cranberry juice
24 ounces pineapple juice
24 ounces orange juice
32 ounces ginger ale



Favorite Season

| Season | # of Students |
|--------|---------------|
| Spring | 30 |
| Summer | 54 |
| Fall | 24 |
| Winter | 12 |

Vocabulary

Complete the following to review your vocabulary for this module.

- For the expression 6^4 :
 - The _____ is 6 and the _____ is 4.
 - A(n) _____ using repeated multiplication is $6 \times 6 \times 6 \times 6$.
- A(n) _____ expression contains at least one variable, while a(n) _____ expression contains only numbers and operations.
- For the expression $4x + 7$, the _____ is 4, the _____ is x , and the _____ is 7.
- To _____ an algebraic or numerical expression, find its value.
- _____ are terms with the same variables raised to the same exponents.

Vocabulary

algebraic expression
base
coefficient
constant
equivalent expression
evaluate
exponent
like term
numerical expression
term
variable

Concepts and Skills

For Problems 6–9, write an equivalent expression and evaluate.

- $5 \times 5 \times 5 \times 5 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
- $\underline{\hspace{2cm}} = 4^3 = \underline{\hspace{2cm}}$
- $\underline{\hspace{2cm}} = 2^5 = \underline{\hspace{2cm}}$
- $3 \times 3 \times 3 \times 3 \times 3 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

10. **MP Use Tools** Howard buys 5 pounds of apples at \$2.50 per pound and 3 pounds of grapes at \$1.50 per pound. What is the total cost of the fruit. State what strategy and tool you will use to answer the question, explain your choice, and then find the answer.
- _____
- _____

For Problems 11–12, identify the variable, coefficient, and constant term of the expression.

- | | |
|--------------------|--------------------|
| 11. $12p + 47$ | 12. $m + 7.5$ |
| variable: _____ | variable: _____ |
| coefficient: _____ | coefficient: _____ |
| constant: _____ | constant: _____ |

13. Write an equivalent expression using the Distributive Property.

$$35 + 21 = 7(\square + \square)$$

14. Write an algebraic expression for 24 more than the product of 2 and x .
- _____

15. Barbara has b bags that each contain 4 pounds of rice. She has another bag that has 3 pounds of rice. Write an algebraic expression that shows how many pounds of rice Barbara has.
- _____

16. Evaluate the expression $5(m - 2) + 10w$ when $m = 8.4$ and $w = 1.25$.

- (A) 8.75
(B) 44.5
(C) 80.25
(D) 52.5

17. Evaluate the expression $6x + \frac{2}{3} - 4y + \frac{1}{2}$ when $x = \frac{3}{4}$ and $y = \frac{1}{6}$.

- (A) $2\frac{2}{3}$
(B) 5
(C) $1\frac{1}{2}$
(D) 4

18. Which expressions are equivalent to $8(2s + 6)$? Select all that apply.

- (A) $16s + 6$
(B) $16s + 48$
(C) $10s + 48$
(D) $4(4s + 12)$
(E) $2(4s + 1) + 4(2s + 1)$

19. Write three expressions that are equivalent to $24k + 12k$.
- _____
- _____

20. A bag of plums costs \$3 per pound and a bag of oranges costs \$2 per pound. If Cammie buys x pounds of plums and y pounds of oranges, what expression could she write to find the total amount she will spend?
- _____

Vocabulary

Choose the correct term from the Vocabulary box.

- a mathematical sentence that shows the relationship between quantities that are not equal _____
- a mathematical sentence that shows that two expressions are equivalent _____
- 3 is the _____ of the equation $b + 2 = 5$
- 8 is a _____ $x < 10$

Vocabulary

equation
solution
inequality
solution of the inequality

Concepts and Skills

- MP Use Tools** A Komodo dragon can grow to be 120 inches long. One Komodo dragon is 92 inches long. Write and solve an equation to find the number of inches x the Komodo dragon still needs to grow to be 120 inches long. State what strategy and tool you will use to answer the question, explain your choice, and then find the answer.

- Dakota has been assigned 80 math problems that are due in 5 days.
 - Write an equation to determine how many problems she should do each day if she wants to do the same number each day. Choose any letter for the variable and explain what it represents.

- Solve the equation. How many problems should Dakota do each day?

- Karen used one-third of her total stamps on a campaign for charity. Karen used 60 stamps on the charity campaign.

- Write an equation you could use to find how many stamps she had at the start. Choose any letter for the variable and explain what it represents.

- Solve the equation. How many stamps did Karen start with?

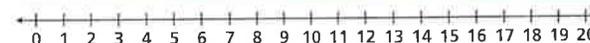
- Denise used 22.5 gallons of water in the shower. This amount is 7.5 gallons less than the amount she used for washing clothes. Write and solve an equation to find the amount of water x Denise used to wash clothes.

- In a visit to Glacier National Park in Montana, Vera hiked a total of 138 miles in 12 days. She hiked the same distance each day. Write and solve an equation to find the number of miles m she hiked each day.

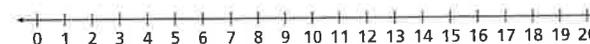
- The temperature dropped 20 degrees from noon to midnight. The temperature at midnight was 24 °F. Write and solve an equation to find the temperature at noon.

For Problems 11–13, write and graph an inequality for each situation.

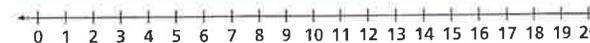
- The width w is less than 10 inches.



- The truck has a weight t of more than 2 tons.



- The temperature t was below 20 °C.



Vocabulary

Identify the dependent and independent variables.

- For every hour of reading, Cameron earns 10 minutes on the computer.

Vocabulary
dependent variable
independent variable

| | Dependent | Independent |
|--------------------------|--------------------------|--------------------------|
| Hours of reading | <input type="checkbox"/> | <input type="checkbox"/> |
| Minutes of computer time | <input type="checkbox"/> | <input type="checkbox"/> |

Concepts and Skills

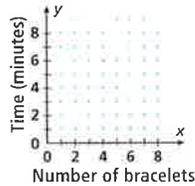
- A community center offers yoga classes for \$8 per month plus an additional \$0.25 per center floor mat used. Write an equation to express this relationship and complete the table.

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- Becka can make a bracelet in 2 minutes. Write an equation to express the relationship between the number of bracelets made and the amount of time it took, in minutes, to make them. Let x represent the number of bracelets made and let y represent the time, in minutes, it took to make the bracelets. Complete the table and graph.

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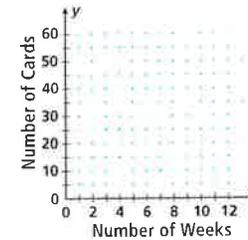


- MP Use Tools** Renee bought 6 tickets to a football game. She paid a total of \$216. Write an equation to represent the situation. What is the cost per ticket? State what strategy and tool you will use to answer the question, explain your choice, and then find the answer.

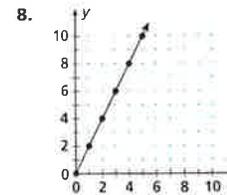
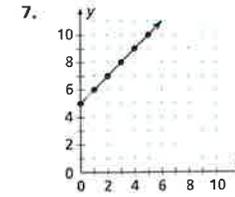
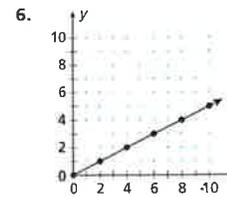
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- Tag's uncle gave him 25 baseball cards to start his collection. Every week, Tag buys 5 more cards. Write an equation that represents the total number of baseball cards Tag has in his collection. Let x represent the number of weeks Tag bought cards, and let y represent the total number of cards Tag has. Complete the table and the graph.

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For Problems 6–8, write an equation representing the given graph.



- Willow works at a grocery store. Her hourly wage is \$10.50 per hour. Write an equation to represent Willow's earnings s if she works t hours. What are Willow's earnings if she works 12 hours?

| |
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| |
| |

13

Review

Vocabulary

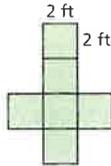
Choose the correct term from the vocabulary box.

- The total area of the faces of a three-dimensional object is the _____.
- A _____ is a pattern that you can cut and fold to make a model of a solid shape.
- A _____ is a solid with a polygon base and triangular faces that meet at the top.

| Vocabulary |
|--------------|
| net |
| pyramid |
| surface area |

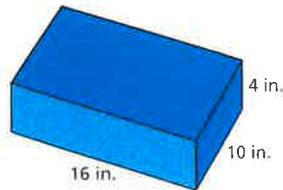
Concepts and Skills

- The net shown can be used to form a cube. What is the surface area of the cube formed by the net?



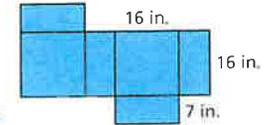
- A cube has a surface area of 54 square centimeters. What is the volume of the cube?

- A painting set is shipped in the box shown. The surface area is printed with advertisements. What is the total area covered by advertisements?



- MP Use Tools** A rectangular prism is 8 cm long, 11 cm wide, and 5.8 cm tall. What is the volume of the prism? State what strategy and tool you will use to answer the question, explain your choice, and then find the answer.

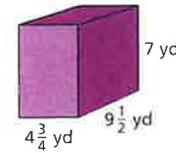
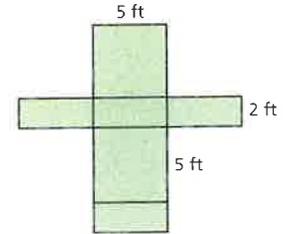
- A box company makes cardboard boxes using flat templates like the one shown. Both squares are congruent, and the remaining four rectangular faces are congruent. What is the surface area of the cardboard box?



- What is the volume of the rectangular prism formed by the net?

- (A) 10 ft^3
- (B) 50 ft^3
- (C) 60 ft^3
- (D) 90 ft^3

- What are the surface area and volume of the prism?



The surface area is _____.

The volume is _____.

- A casserole dish is in the shape of a rectangular prism. The dish is 6 inches wide, 12 inches long, and 5 inches deep. What is the volume of the dish?

- Jerome is painting a rectangular toolbox that is 20 inches by 10 inches by 8 inches. A tube of paint covers 300 square inches.

A. What is the surface area of the toolbox?

B. How many tubes of paint should Jerome buy?

- A planter in the shape of a rectangular prism is 24 inches by 4 inches by 5 inches. How much dirt is needed to fill the planter?