SECTION 1 Study Guide | **Structure of Matter** | **Chapter 4**

Directions: *List five things that are matter and five things that are not matter.*

Matter	Not Matter
1.	
2.	
3.	
4.	
5.	

Directions: *List the five main points of Democritus' atom theory.*

6. _____

7. _____

8. _____

9. _____

10. _____

Directions: *Use the word bank to fill in the blanks to match the phrases below.*

atom	Chadwick	electron cloud	orbits	Rutherford
atomic model	electron	neutron	proton	Thomson

_____ 11. a neutral particle that is located in the nucleus

_____ 12. a negative particle that orbits the nucleus

_____ 13. a positive particle that is located in the nucleus

_____ 14. the area where modern scientists think electrons are likely to be found

_____ 15. scientist who discovered that atoms contained electric charge

_____ 16. a student of Niels Bohr who discovered neutrons in the nucleus

_____ 17. the place where Bohr thought electrons would be found

_____ 18. the smallest piece of matter that keeps the properties of the element to which it belongs

_____ 19. scientist who proposed the idea of a nucleus

_____ 20. a way of thinking about the structure of the atom

Personification: Analyze & Identify

personification giving human qualities to nonhuman things
My soft bed invited me to take a nap.

Directions: Read each sentence and indicate what object is being personified. Then, identify the human quality being used.

Sentence	Personified Object	Human Quality
1. I put on my tired, old blue jeans.	blue jeans	tired
2. The soft breeze tickled my cheeks.		
3. The full moon smiled down on the campers.		
4. The last cupcake begged me to eat it.		
5. The spring flowers danced in the wind.		
6. Time crawled by as we waited for vacation.		
7. The wilted tulip begged for water.		
8. The engine coughed before it died completely.		
9. At night, the forest keeps many secrets.		
10. The hammer pounded angrily on the nail.		
11. The apple tree waited patiently to be picked.		
12. The grass loves the season of summer!		
13. The tiny snowflakes kissed me as they fell.		
14. The sun winked at us as it set in the sky.		
15. The frantic drum echoed its beat.		

reading candy a figurative language unit

Cubic Units	Used to measure volume.
Lateral Faces	Any face that is not a base
Prism	A three-dimensional figure with at least three rectangular lateral faces and top and bottom faces parallel
Pyramid	A three dimensional figure with at least three triangular sides that meet at a common vertex and only one base that is a polygon
Rectangular Prism	A prism that has a rectangular bases
Slant Height	The height of each lateral face
Surface Area	The sum of the areas of all the surfaces of a three-dimensional figure
Three-Dimensional Figure	A figure with length, width, and height
Triangular Prism	A prism that has triangular bases
Vertex	The point where three or more faces intersect
Volume	The amount of space inside a three-dimensional figure. Measured in cubic units

Base	One of the two parallel congruent faces of a prism, any side of a parallelogram
Composite Figures	A figure made of triangles, quadrilaterals, semicircles, and other two-dimensional figures
Coordinate Plane	A plane in which a horizontal number line and a vertical number line intersect at their zero point
Congruent	Having the same measure
Formula	An equation that shows the relationship among certain quantities
Height	The shortest distance from the base of a parallelogram to its opposite side
Parallelogram	A quadrilateral with opposite sides parallel and opposite sides congruent
Polygon	A simple closed figure formed by three or more straight line segment
Rhombus	A parallelogram having four congruent sides

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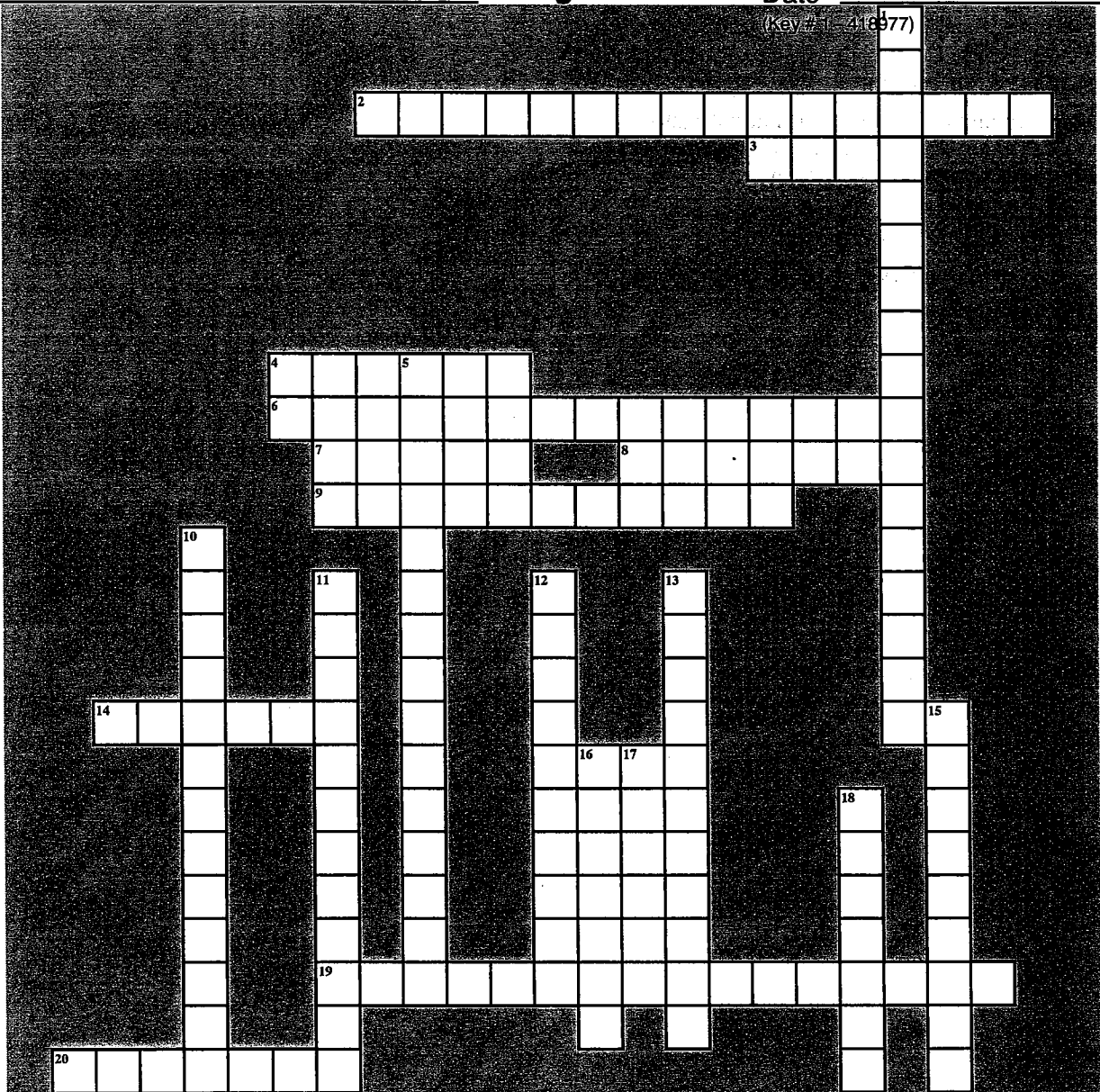
Across

2 A prism that has a rectangular base (2 words)

3 Any side of a parallelogram

4 The point where three or more faces intersect

6 A plan in which a horizontal and vertical number lines intersect (2 words)

7 A three-dimensional figure with at least three rectangular lateral faces and top and bottom faces parallel

8 A simple closed figure formed by three or more straight line segments

9 The height of each lateral face (2 words)

14 The amount of space inside a 3-D, Measured in cubic units

19 A figure made of triangles, quadrilaterals, semicircles and other two-dimensional figures (2 words)

20 A parallelogram having four congruent sides

Down

1 A figure with length, width and height

5 A prism that has triangular bases (2 words)

10 a quadrilateral with opposite sides parallel and opposite sides congruent

Down

11   Any face that is not a base (2 words)

12   Used to measure volume (2 words)

13   The sum of the areas of all the surfaces of a 3-D
     figure (2 words)

15   Having the same measure

16   A three-dimensional figure with at least three
     triangular sides that meet at a common vertex
     and only one base that is a polygon

17   The shortest distance from the base of a
     parallelogram to its opposite side

18   An equation tha shows the relationship among
     certain quantities

Area of Rectangles and Parallelograms

1. The _____ of a polygon is the amount of surface it covers.
2. To find the area of a rectangle, _____ the base by the height.
3. The algebraic formula is: _____.
4. Area is measured in _____ units.
5. Find the area of each rectangle below:

3 in.   6 in.

12 in.
16 in.

15 m
11 m
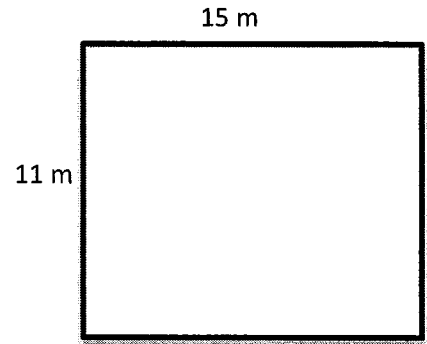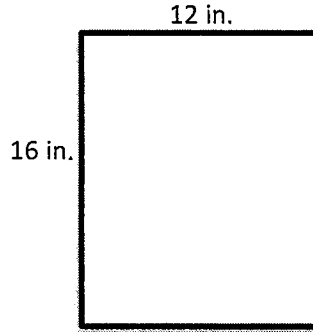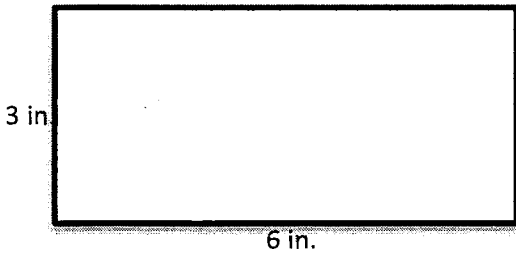
The area of a parallelogram is the _____ of its base and its height.
7. The algebraic formula is: _____.
8. Find the area of each parallelogram below:

6 m.   7 m.

10 in.   8 in.

3 cm   12 cm
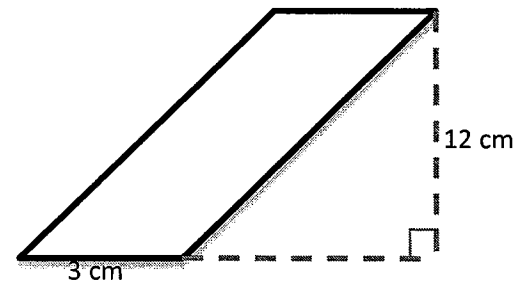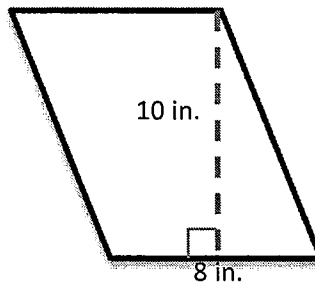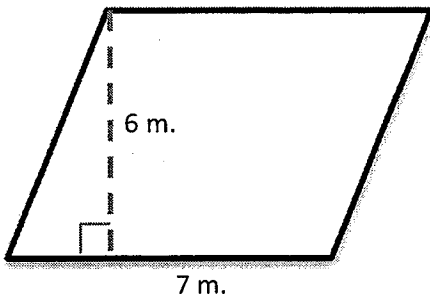
Practice: Area of Rectangles and Parallelograms

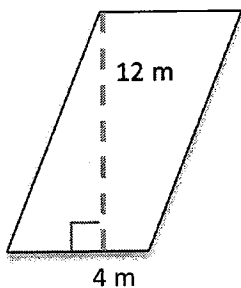|	
#1 What is the area of a square with a side length of 3 cm?	**#2** What is the area of a rectangle with a base of 22 inches and a height of 15 inches?

#3 What is the area of a parallelogram with a base of 100 cm and a height of 50 cm?
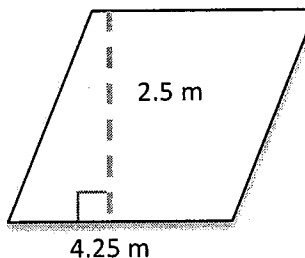
#4 Find the area of the figure below:

14 in.

65 in.
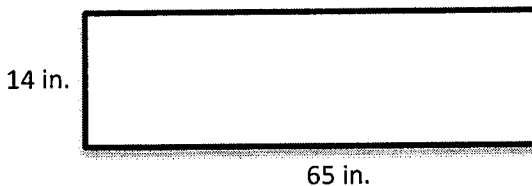
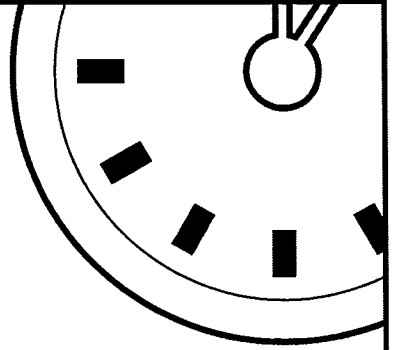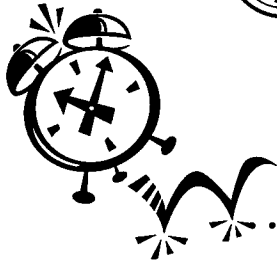**#5** Find the area of the figure below:

12 m

4 m

#6 Find the area of the figure below:

2.5 m

4.25 m

#7 Christopher is helping paint the set for the school play. He has to paint a wooden parallelogram with a base of 7 feet and a height of 14 feet. What is the area of the surface that Christopher must paint?
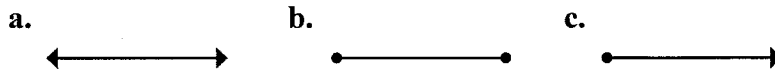
MINUTE 24

1. What is the value in cents of 10 quarters and 2 dimes? _____

2. Which of the following represents a line?

a. ⟷   b. •——•   c. •——⟶

3. Which fraction represents $15 \div 2$?

a. $\dfrac{2}{15}$ b. $\dfrac{15}{2}$ c. $\dfrac{15}{15}$ d. $\dfrac{2}{2}$

4. $\dfrac{2}{7} + \dfrac{3}{7} =$

5. $4 + 7 + \boxed{} = 32$

6. Fill in the empty square to the right by following the pattern given.

3	8		6
9	24	30	18

7. The width of a rectangle is 4 feet. If the area is 36 ft.^{2}, then the length = _____.

8. Find the sum of the first column. _____

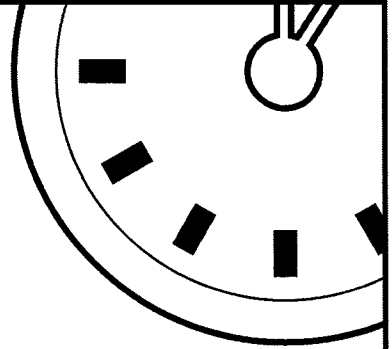| 1	2	9
5	8	6
4	3	7

9.
$$\begin{array}{r} 86 \\ \times\ 10 \\ \hline \end{array} \qquad \begin{array}{r} 93 \\ \times\ 10 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 50 \\ \times\ 50 \\ \hline \end{array} \qquad \begin{array}{r} 60 \\ \times\ 60 \\ \hline \end{array}$$
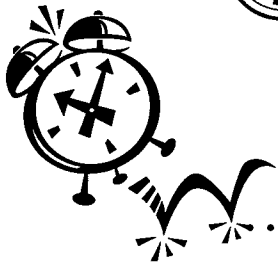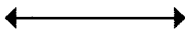
MINUTE 25

1. Kelly has $10, which is $2 more than Tina has. How much money does Tina have?

_____

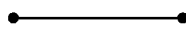**2.** Which of the following represents a ray?

a.   ← →   b.   •——•   c.   •——→

3. Which of the following represents the division problem $16 \div 9$ as a fraction?
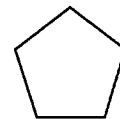
a. $\dfrac{9}{16}$ b. $\dfrac{16}{16}$ c. $\dfrac{16}{9}$ d. $\dfrac{6}{19}$

4. $\dfrac{5}{7} + \dfrac{6}{7} =$

5. Use $+$, $-$, $\times$, or $\div$ to complete. $7 \boxed{} 5 = 35$

6. How many sides should the next shape in the pattern have? _____

7. If every side of an octagon is 6 inches, what is the perimeter? _____

8. What is the product of the first (shaded) row? _____

1	2	9
5	8	6
4	3	7

9. Find the remainders for $3\overline{)14}$ and $5\overline{)17}$. _____

10. $\dfrac{1}{2}$ of $12 =$ $\dfrac{1}{2}$ of $18 =$