C. T. Walker Magnet
School 7th Grade Summer
Assignment

Seventh Grade Summer Reading Assignment:

Instructions:

1. Read at least three novel books during the summer.
2. In a handwritten format or in an electronic format, such as Microsoft Word, complete a reading summary of each of the three books that includes the following information: This assignment will be used as a daily grade and will be due the first day of school.
    - **Title**
    - **Author**
    - **Setting**
    - **Main Characters** - Give a brief description of each main character
    - **Plot** -Write a summary of the story in paragraph form that includes the beginning, the important events and the conclusion.
    - **Book Review-** Answer in paragraph form the following questions. What was our favorite part of the book? Why? What was your least favorite part of the book? Why?
    - **Text to Text connection** - How did this book remind you of another book you have read?

7th Grade Supply List

Required Items	Quantity
Composition Notebook (100 Sheets and 200 pages)	4 notebooks
Colored pencils and/or markers (Crayola)	1 pack
Pencils	2 packs
White Out	1-2 bottles or rollers
Scissors	1 pair
Glue Sticks	10 sticks
Pens (blue and black ink)	2 or4 pack
Highlighters	2 packs
Scientific Calculator	1 calculator
Flash Drive	1 flash drive
Loose Leaf Paper	5 packs
Book Covers	Enough for 4 Books
Graphing Paper	3 packs
Index Cards (3x5)	1 pack of 100
Sturdy Folders	3 folders
3 Ring Binder (2 inches)	2 binder
Tab Dividers	4 sets
Construction Paper (multicolored)	1 pack
Poster Boards	8 boards
Expo Markers & Erasers	1 pack each
Wish List (Please and Thank You!)	**Quantity**
Post-It Notes 3x3 size (multicolored)	1 pack
Hand Sanitizer	1 bottle
Tissues & Paper Towels	2 boxes
Cleaning wipes (any brand)	1 pack
2 Gallon Ziplock Bags (sold at Target)	1 pack of 38

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CHAPTER

Positive Numbers and the Number Line

Lesson 1.1 The Number Line

Complete the number patterns.

1. _____, 29, 30, _____, 32, _____, 34, 35

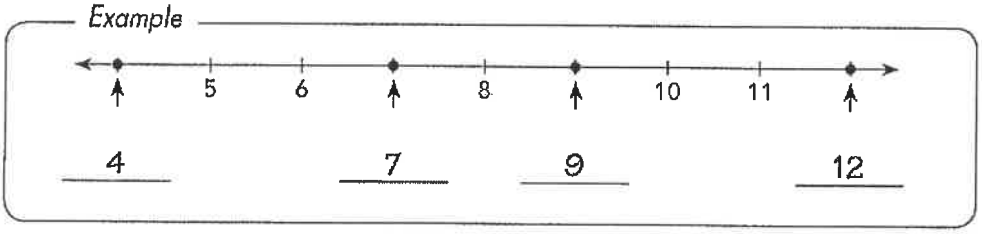
2. 2, 4, _____, 8, 10, _____, 14, _____

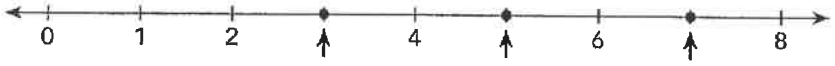
3. _____, 15, 18, _____, 24, 27, 30

4. 8, 12, 16, 20, _____, 28, _____, 36

Complete the number lines.

Example



5. 

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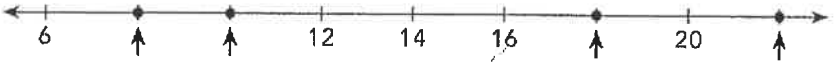
7. 

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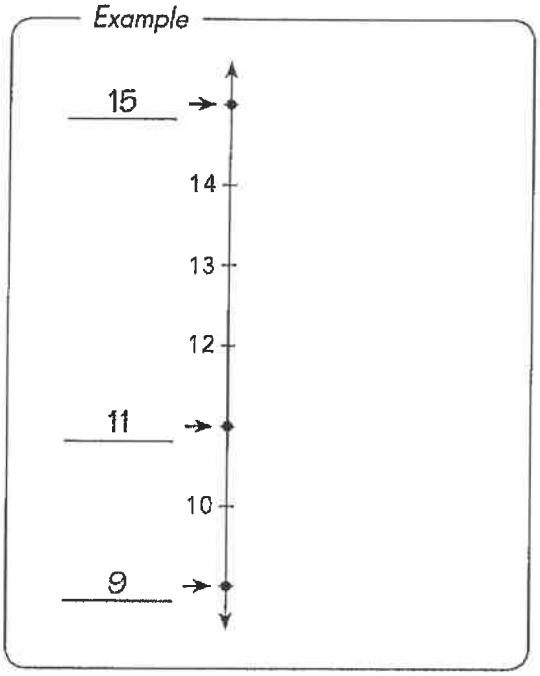
Complete the number lines.

Example



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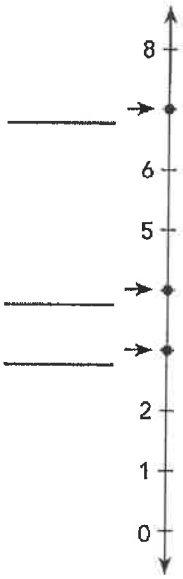

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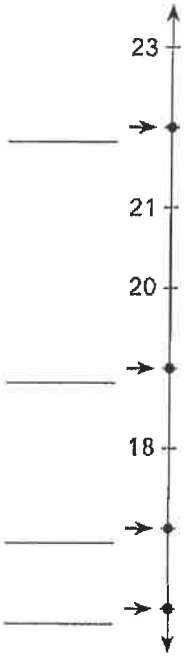

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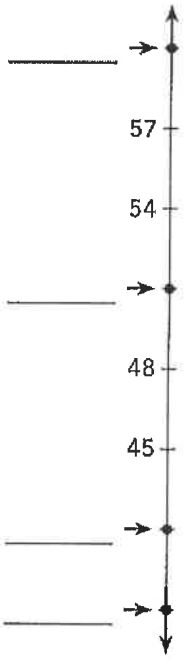
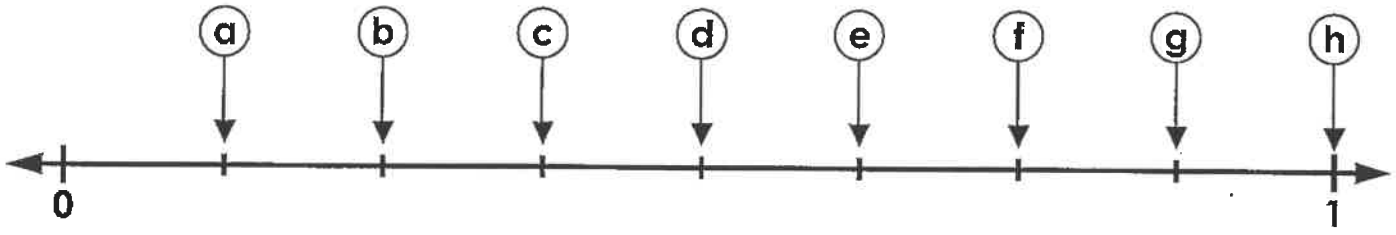


Name: _____

Fractions Number Line

Write the correct letter on the blank line next to each fraction.



$\frac{1}{2}$ d $\frac{7}{8}$ _____ $\frac{1}{4}$ _____ $\frac{8}{8}$ _____

$\frac{5}{8}$ _____ $\frac{3}{4}$ _____ $\frac{1}{8}$ _____ $\frac{3}{8}$ _____

Compare the fractions using <, >, and =.

$\frac{3}{8}$ (>) $\frac{1}{4}$ $\frac{4}{8}$ ◯ $\frac{1}{2}$ $\frac{5}{8}$ ◯ $\frac{3}{4}$

$\frac{1}{2}$ ◯ $\frac{3}{4}$ $\frac{7}{8}$ ◯ $\frac{1}{4}$ $\frac{1}{4}$ ◯ $\frac{2}{8}$

$\frac{1}{4}$ ◯ $\frac{7}{8}$ $\frac{8}{8}$ ◯ 1 $\frac{1}{2}$ ◯ $\frac{6}{8}$

Mrs. Browning asked her class to help with safety patrol. $\frac{4}{8}$ of the class went with her to help younger students onto the buses. Mr. Tobias took $\frac{1}{2}$ of the class to help students at the crosswalk. Compare the fractions of the class that went with each teacher using <, >, or =.

Mrs. Browning $\frac{4}{8}$ ◯ $\frac{1}{2}$ **Mr. Tobias**

Name: _____

Multiples

A **multiple** is the product of a given whole number and another whole number.

1 x 6 = 6	2 x 6 = 12	3 x 6 = 18
4 x 6 = 24	5 x 6 = 30	6 x 6 = 36
6 x 7 = 42	6 x 8 = 48	6 x 9 = 54

and so on...

What are the first 6 multiples of 6? **6, 12, 18, 24, 30, and 36**

1. What are the first 4 multiples of 9? _____, _____, _____, and _____

2. Circle the numbers that are multiples of 7.
Cross out the numbers that are not multiples of 7.

1	7	14	17	21	27	35

3. Circle the numbers that are multiples of 8.
Cross out the numbers that are not multiples of 8.

38	40	45	49	64	72	81

4. Are multiples of 4 always even? Explain.

_____

_____

5. Are multiples of 3 always odd? Explain.

_____

_____

Name: _____

Squares and Square Roots

Cut out the squares and square roots at the bottom of the page. Glue them into the box next to their equivalent number.

5	
7	
36	
8	
3	

81	
25	
9	
4	
11	

10	
64	
6	
49	
12	

9^2	$\sqrt{49}$	6^2	$\sqrt{16}$	$\sqrt{64}$	5^2	$\sqrt{81}$	$\sqrt{100}$

$\sqrt{144}$	$\sqrt{9}$	$\sqrt{25}$	8^2	$\sqrt{36}$	$\sqrt{121}$	7^2

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Lesson 3.2 Multiplying Decimals

Multiply.

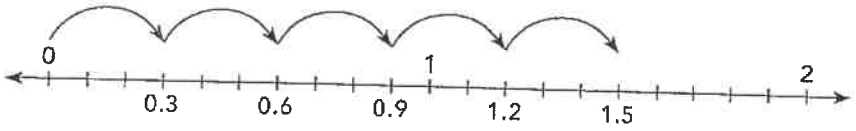
Example

0.3 × 5

Method 1

0.3 × 5 = 5 × 0.3

5 × 0.3 means 5 groups of 0.3.



5 × 0.3 = 5 × 3 tenths

= 15 tenths

= 1.5

From the number line, you can see that 5 × 0.3 = 0.3 + 0.3 + 0.3 + 0.3 + 0.3

Method 2

Step 1

$$\begin{array}{r} 3 \\ \times\ 5 \\ \hline 15 \end{array}$$

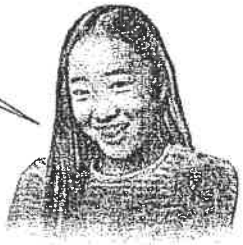
Step 2

$$\begin{array}{r} 0.3 \\ \times\ 5 \\ \hline 1.5 \end{array}$$

← 1 decimal place

← 1 decimal place

Step 1: Ignore the decimal point as you multiply.
Step 2: Decide where to place the decimal point in the product.



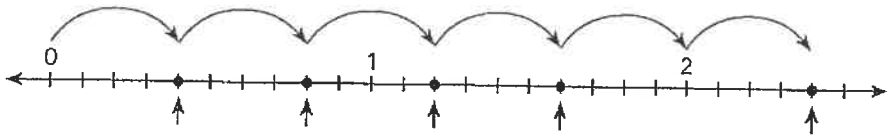
Name: _____ Date: _____

1. 0.4 × 6

Method 1

0.4 × 6 = 6 × 0.4

6 × 0.4 means _____ groups of _____.



_____ _____ _____ _____ _____

6 × _____ = 6 × _____ tenths

= _____ tenths

= _____

Method 2

Step 1

$$\begin{array}{r} 4 \\ \times \quad 6 \\ \hline \end{array}$$

Step 2

$$\begin{array}{r} 0.4 \\ \times \quad 6 \\ \hline \end{array}$$

2. 0.7 × 5

3. 8 × 0.3

Name: _____

Reciprocals

Find the reciprocals of the fractions and mixed numbers and write them in the space provided.

1.	$2\frac{5}{12}$	**2.**	$\frac{37}{74}$	**3.**	$\frac{17}{41}$
4.	$3\frac{4}{13}$	**5.**	$\frac{12}{19}$	**6.**	62
7.	$\frac{7}{55}$	**8.**	$\frac{5}{36}$	**9.**	$\frac{8}{9}$
10.	$5\frac{7}{8}$	**11.**	$7\frac{3}{11}$	**12.**	$\frac{42}{93}$
13.	22	**14.**	$\frac{18}{25}$	**15.**	$4\frac{5}{6}$
16.	$\frac{67}{70}$	**17.**	$\frac{22}{49}$	**18.**	$\frac{17}{32}$
19.	$\frac{3}{97}$	**20.**	$4\frac{7}{20}$	**21.**	$\frac{27}{56}$
22.	35	**23.**	$\frac{15}{46}$	**24.**	$9\frac{3}{4}$
25.	$3\frac{11}{14}$	**26.**	$\frac{60}{61}$	**27.**	$2\frac{15}{24}$
28.	$5\frac{7}{15}$	**29.**	106	**30.**	$\frac{64}{87}$

Name: _____

Multiplying Fractions

Step 1: Multiply the numerators. $\frac{3}{5} \times \frac{2}{3} = \frac{6}{\quad}$

Step 2: Multiply the denominators. $\frac{3}{5} \times \frac{2}{3} = \frac{6}{15}$

Step 3: Simplify your answer if possible. $\frac{3}{5} \times \frac{2}{3} = \frac{6}{15} = \frac{2}{5}$

a. $\frac{7}{8} \times \frac{4}{9}$

b. $\frac{4}{5} \times \frac{1}{4}$

c. $\frac{2}{9} \times \frac{1}{7}$

d. $5 \times \frac{7}{8}$

e. $\frac{2}{3} \times \frac{5}{8}$

f. $\frac{3}{4} \times 8$

g. $\frac{2}{3} \times 9$

h. $\frac{3}{7} \times \frac{5}{9}$

i. $\frac{9}{10} \times \frac{5}{18}$

j. $\frac{2}{3} \times \frac{6}{7} \times \frac{3}{5}$

k. $7 \times \frac{2}{3} \times \frac{3}{4}$

Name: _____

Improper Fractions & Mixed Numbers

Write each mixed number as an improper fraction

a. $2\frac{1}{4} =$ **b.** $8\frac{3}{8} =$ **c.** $2\frac{5}{6} =$ **d.** $4\frac{1}{2} =$

e. $5\frac{1}{3} =$ **f.** $10\frac{7}{12} =$ **g.** $9\frac{1}{4} =$ **h.** $6\frac{5}{6} =$

i. $7\frac{5}{6} =$ **j.** $10\frac{3}{7} =$ **k.** $11\frac{1}{3} =$ **l.** $20\frac{1}{2} =$

Write each improper fraction as a mixed number.

m. $\frac{7}{5} =$ **n.** $\frac{9}{4} =$ **o.** $\frac{5}{3} =$ **p.** $\frac{22}{9} =$

q. $\frac{13}{7} =$ **r.** $\frac{9}{2} =$ **s.** $\frac{17}{9} =$

t. $\frac{7}{3} =$ **u.** $\frac{17}{7} =$ **v.** $\frac{10}{3} =$

w. Mrs. Jones bakes pies. She always cuts each pie into 8 slices. There are 13 slices left on the counter. Write the number of pies on the counter as a mixed number and as an improper fraction.

_____

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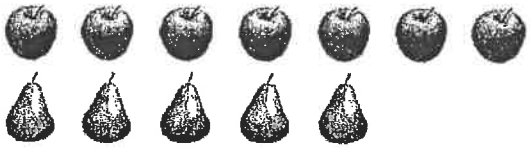
CHAPTER

Ratio

Lesson 4.1 Comparing Two Quantities

Complete.

Example

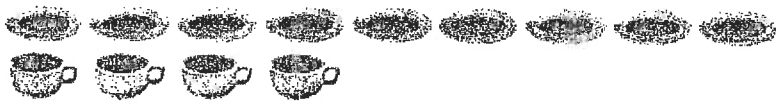


7 : 5 and 5 : 7 are called **ratios**. 5 and 7 are the **terms** of these ratios.

The ratio of the number of apples to the number of pears is 7 : 5.

The ratio of the number of pears to the number of apples is 5 : 7.

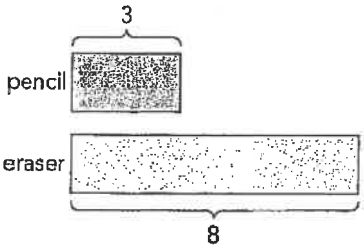
1.



The ratio of the number of saucers to the number of cups is _____ : _____.

The ratio of the number of cups to the number of saucers is _____ : _____.

2.



The ratio of the number of pencils to the number of erasers is _____ : _____.

The ratio of the number of erasers to the number of pencils is _____ : _____.

Name: _____ Date: _____

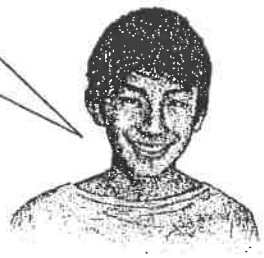
State whether each of the following can be expressed as a ratio.

Example

9 in. and 3 ft Yes

2 yd and 4 g No

9 inches and 3 feet are measurements of length. 9 inches and 3 feet can be expressed in the same unit. So, 9 inches and 3 feet can be expressed as a ratio.
2 yards is a measurement of length. 4 grams is a measurement of mass. 2 yards and 4 grams cannot be expressed in the same unit. So, 2 yards and 4 grams cannot be expressed as a ratio.



3. 12 cm and 3 m _____

4. 1 mL and 2 kg _____

5. 7 in.^{2} and 1 lb _____

6. 3 h and 11 min _____

Complete.

Example

5 m : 19 cm = 500 cm : 19 cm

= 500 : 19

Think:

1 m = 100 cm

5 m = 500 cm

7. 13 mL : 1.2 L = _____ mL : _____ mL

= _____ : _____

Think:

1 L = 1,000 mL

1.2 L = _____ mL

8. 31 oz : 2 lb = _____ oz : _____ oz

= _____ : _____

Think:

1 lb = 16 oz

2 lb = _____ oz

Name : _____ Score : _____

Equivalent Ratio

Sheet 1

A) Write any two equivalent ratios for each ratio.

1) 1 : 2

_____

2) 4 : 9

_____

3) 5 : 3

_____

4) 7 : 10

_____

5) 8 : 11

_____

6) 12 : 13

_____

7) 9 : 20

_____

8) 17 : 5

_____

B) Complete the equivalent ratio table.

1)

7	21	35	
3			27

2)

5		25	35
9	18		

3)

10	20	50	70
13			

4)

11	22		
2		8	16

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CHAPTER

Rates

Lesson 5.1 Rates and Unit Rates

Find each product. Express the product in simplest form if necessary.

1. 182×15

2. 26×394

3. $63 \times \frac{4}{9}$

4. $\frac{8}{15} \times 75$

5. $4\frac{7}{8} \times 28$

6. $56 \times 2\frac{5}{27}$

7. $\frac{5}{6} \times \frac{42}{65}$

8. $\frac{15}{47} \times \frac{63}{90}$

Find each quotient. Express the quotient in simplest form.

Keep, switch, flip

9. $\frac{8}{9} \div 12$

10. $36 \div \frac{6}{11}$

11. $\frac{5}{7} \div \frac{15}{98}$

12. $\frac{65}{114} \div \frac{26}{51}$

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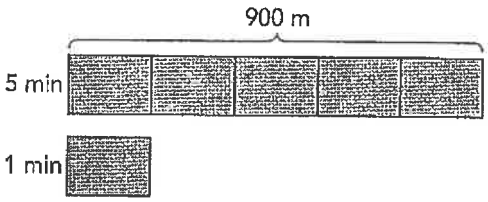
Solve.

Example

Jim walks 900 meters in 5 minutes. At what rate does he walk?

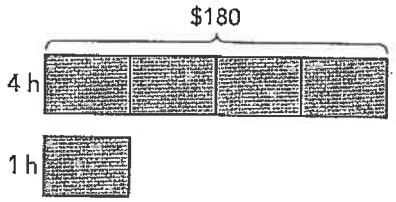


5 min → 900 m

1 min → 900 ÷ 5 = 180 m

Jim walks at a rate of 180 meters per minute.

22. A plumber earns $180 for 4 hours of work. How much does the plumber earn per hour?



_____ h → $_____

_____ h → $_____ ÷ _____ = $_____

The plumber earns $_____ per hour.

23. A photocopy machine can print 240 copies in 30 minutes. What is the rate at which the machine prints the copies per minute?

24. A dancer kicks 35 times during a 5-minute dance routine. What is the rate at which the dancer kicks per minute?

Chapter 5 Review

a) Circle the statement that is expressed as a unit rate.

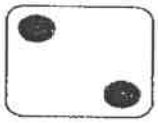
Rob pays $2 for a bottle of gatorade.
Bill eats 6 cups of cereal in 6 days.

b) Write this statement as a unit rate:

A machine can make 120 potato chips in 5 minutes

a) Joann walks her dog ¾ mile in 7/10 hour. What is her speed in miles per hour?

b) Alicia makes $117.80 in one week. She worked 15.2 hours that week. What is her hourly rate?



Jill rented roller skates at Marple Sports Arena from 11:00am to 4:00pm. How much did she pay?

First hour - $12
Each additional ½ hour -$5.50

A plane is traveling at a constant speed. In 8 hours the plane travels 3,400 miles. How many hours will it take to travel 1,275 miles?

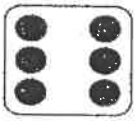
Which meat cost the most per pound?

Turkey - 5 lb for $42.50

Ham - 3 lb for $21.75

Roast Beef - 4 lb for $35

Constance ran around a 400 meter track 4 times. The first two times took her 5 minutes and the last two took her 7 minutes. Find her average speed.



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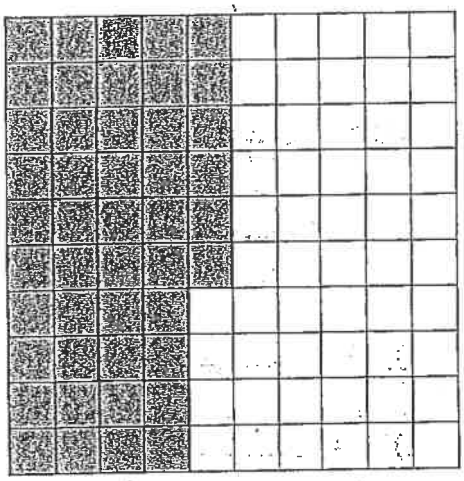
Chapter 10 Percent

Practice 1 Percent

Each large square is divided into 100 parts.
Fill in the blanks to describe each large square.

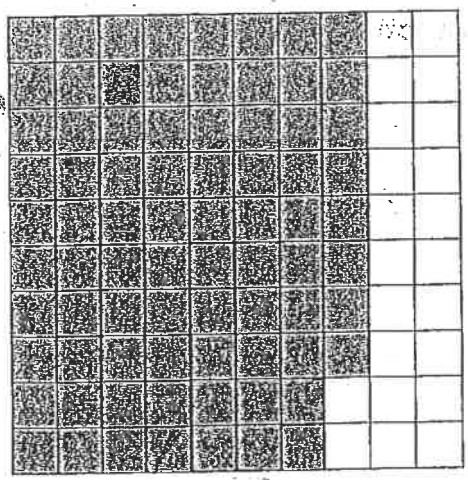
1. 

_____ out of 100 equal parts are shaded.

_____% of the large square is shaded.

_____ out of 100 equal parts are not shaded.

_____% of the large square is not shaded.

2. 

_____ out of 100 equal parts are shaded.

_____% of the large square is shaded.

_____ out of 100 equal parts are not shaded.

_____% of the large square is not shaded.

Express each fraction as a percent.

Example

$\frac{38}{100} = \underline{38}\%$

3. $\frac{92}{100} = \_\_\_\_\_\%$

4. $\frac{7}{100} = \_\_\_\_\_\%$

5. $\frac{19}{100} = \_\_\_\_\_\%$

6. $\frac{6}{10} = \_\_\_\_\_\%$

7. $\frac{4}{10} = \_\_\_\_\_\%$

Express each decimal as a percent.

Example

$0.15 = \frac{\boxed{15}}{100}$

$= \underline{15}\%$

8. $0.28 = \frac{\square}{100}$

$= \_\_\_\_\_\%$

9. $0.07 = \_\_\_\_\_\%$

10. $0.01 = \_\_\_\_\_\%$

11. $0.08 = \_\_\_\_\_\%$

12. $0.5 = \_\_\_\_\_\%$

13. $0.9 = \_\_\_\_\_\%$

14. $0.8 = \_\_\_\_\_\%$

Express each percent as a fraction with a denominator of 100.

Example

$53\% = \frac{\boxed{53}}{100}$

15. $7\% = \frac{\square}{100}$

16. $13\% = \square$

17. $31\% = \square$

18. $5\% = \square$

19. $79\% = \square$

homework **Homework Problems**

Name _____

Team Name	Team Complete?	Team Did Not Agree On Questions...
		#'s

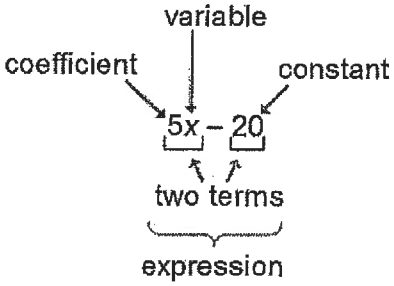
Quick Look

Vocabulary words introduced in this cycle:
variable, constant, coefficient, term, algebraic expression

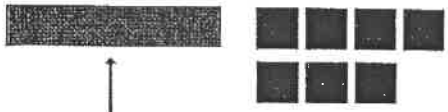
Today we identified terms associated with algebraic expressions:

Constant– A *constant* is a quantity that always stays the same.
Variable– A *variable* is an unknown value or a value that can change.
Coefficient– A *coefficient* is a number multiplied by a variable.
Term– A *term* is a single constant, variable, or variable with a coefficient.
Algebraic Expression– An *algebraic expression* is a collection of terms connected by operations that includes one or more variables.

Here's an example.



We can also represent the expression, $x + 7$, with algebra tiles:



This is a variable tile. There is 1 variable tile which means the coefficient of x is 1.

These are unit tiles representing the constant, 7.

Directions for questions 1–6: Identify the variables, constants, number of terms, and coefficients.

1) $11w + 0.9 + 20\frac{1}{2}$

a. variable(s) _____

b. constant(s) _____

c. number of terms _____

d. coefficient(s) _____

2) $103y$

a. variable(s) _____

b. constant(s) _____

c. number of terms _____

d. coefficient(s) _____

3) $3 + 3m + 4.5 + r$

a. variable(s) _____

b. constant(s) _____

c. number of terms _____

d. coefficient(s) _____

4) $5p + 3p + 8^2$

a. variable(s) _____

b. constant(s) _____

c. number of terms _____

d. coefficient(s) _____

5) $x + 24$

a. variable(s) _____

b. constant(s) _____

c. number of terms _____

d. coefficient(s) _____

6) $7^2 + 4k$

a. variable(s) _____

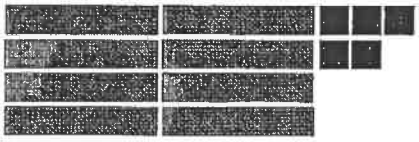
b. constant(s) _____

c. number of terms _____

d. coefficient(s) _____

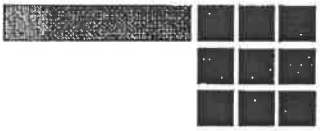
Directions for questions 7 and 8: Write an algebraic expression that represents the given algebra tiles.

7)



_____

8)



_____

Directions for questions 9 and 10: Sketch algebra tiles to represent the algebraic expression.

9) $4u + 2$

_____

10) $b + 10$

_____

Mixed Practice

11) Assign a variable to an unknown quantity in the situation.

Henry slept for 45 minutes longer on Saturday night than he did on Thursday night.

_____

12) Convert 3.5% to a decimal.

_____

13) What is 17% of 200?

_____

14) Evaluate.

$3 \cdot (45 - 20 \div 4)$

_____

Word Problem

15) Sue added y and 3. How many terms are in her expression? What is the constant in her expression? What is the coefficient in her expression? Explain your thinking.

_____

_____

_____

For the Guide on the Side

Today your student identified vocabulary associated with algebraic expressions. Algebraic expressions are expressions that include one or more variables. A variable is an unknown value or value that can change. It is often written as a lower case letter such as x or y.

Your student also learned that a constant is a quantity that always stays the same. In $z + 34$, 34 is the constant and z is the variable. A coefficient is a number multiplied by a variable. In $5a$, 5 is the coefficient because $5a = 5 \cdot a$. Finally, a term is a single constant, variable, or variable with a coefficient. For example, in $35 + 7b$, there are two terms: 35 and $7b$.

Your student should be able to answer the following questions about algebraic expressions and vocabulary:

1) Explain what the coefficient of n is in the expression $n + 3$.
2) How many terms are in this expression? How do you know?
3) Is this expression a numeric or algebraic expression? How do you know?
4) Why do you think it is important to know these vocabulary words?

Here are some ideas to work with algebraic expressions and vocabulary:

1) Play 21 questions! Have someone write an algebraic expression for your student. Your student does not see the expression and asks questions (they do not need to be yes or no questions) to try to guess the expression (e.g. How many terms? Is the constant greater than 5?) You may want to set guidelines for the expressions (e.g. all numbers in the expression are less than 10) so that it is not too difficult to guess.
2) Represent expressions with household items! Write an algebraic expression for your student. Have your student represent the expression with household items (perhaps pencils could represent variables and erasers could represent units).

Name: _____ Date: _____

Solve each equation using the concept of balancing. Write your answer in simplest form.

Example

$x + \frac{1}{6} = \frac{5}{6}$

$x + \frac{1}{6} = \frac{5}{6}$

$x + \frac{1}{6} - \frac{1}{6} = \frac{5}{6} - \frac{1}{6}$

$x = \frac{4}{6}$

$= \frac{2}{3}$

Subtract $\frac{1}{6}$ from both sides of the equation and the two sides will remain equal. Then simplify.

$x = \frac{2}{3}$ is the solution of the equation $x + \frac{1}{6} = \frac{5}{6}$.

45. $x + \frac{3}{8} = \frac{7}{8}$

$x + \frac{3}{8} = \frac{7}{8}$

$x + \frac{3}{8} - \_\_\_\_ = \frac{7}{8} - \_\_\_\_$

$x = \_\_\_\_$

$= \_\_\_\_$

$x = \_\_\_\_$ is the solution of the equation $x + \frac{3}{8} = \frac{7}{8}$.

Name: _____ Date: _____

46. $e + \frac{2}{10} = \frac{7}{10}$

$e + \frac{2}{10} = \frac{7}{10}$

$e + \frac{2}{10}$ ◯ _____ $= \frac{7}{10}$ ◯ _____

$e =$ _____

$e =$ _____

$e =$ _____ is the solution of the equation $e + \frac{2}{10} = \frac{7}{10}$.

47. $k + \frac{4}{9} = \frac{7}{9}$

48. $\frac{11}{12} = p + \frac{2}{12}$

Solve each equation using the concept of balancing. Write your answer in simplest form.

Example

$x - \frac{2}{9} = \frac{1}{9}$

$x - \frac{2}{9} = \frac{1}{9}$

$x - \frac{2}{9} + \frac{2}{9} = \frac{1}{9} + \frac{2}{9}$

$x = \frac{3}{9}$

$= \frac{1}{3}$

Add $\frac{2}{9}$ to both sides of the equation and the two sides will remain equal. Then simplify.

$x = \frac{1}{3}$ is the solution of the equation $x - \frac{2}{9} = \frac{1}{9}$.

Name: _____ Date: _____

49. $g - \frac{1}{6} = \frac{1}{6}$

$g - \frac{1}{6} = \frac{1}{6}$

$g - \frac{1}{6} + \_\_\_\_\_ = \frac{1}{6} + \_\_\_\_\_$

$g = \_\_\_\_\_$

$= \_\_\_\_\_$

$g = \_\_\_\_\_$ is the solution of the equation $g - \frac{1}{6} = \frac{1}{6}$.

50. $d - \frac{7}{15} = \frac{2}{15}$

$d - \frac{7}{15} = \frac{2}{15}$

$d - \frac{7}{15} \bigcirc \_\_\_\_\_ = \frac{2}{15} \bigcirc \_\_\_\_\_$

$d = \_\_\_\_\_$

$= \_\_\_\_\_$

$d = \_\_\_\_\_$ is the solution of the equation $d - \frac{7}{15} = \frac{2}{15}$.

51. $w - \frac{1}{8} = \frac{5}{8}$

52. $\frac{7}{10} = n - \frac{1}{10}$

Name: _____ Date: _____

Solve each equation using the concept of balancing. Write your answer in simplest form.

Example

$5x = \frac{2}{5}$

$5x = \frac{2}{5}$

$5x \div \underline{5} = \frac{2}{5} \div \underline{5}$

$x = \frac{2}{5} \cdot \underline{\frac{1}{5}}$

$= \underline{\frac{2}{25}}$

$x = \underline{\frac{2}{25}}$ is the solution of the equation $5x = \frac{2}{5}$.

53. $7x = \frac{4}{7}$

$7x = \frac{4}{7}$

$7x \div \_\_\_\_ = \frac{4}{7} \div \_\_\_\_$

$x = \frac{4}{7} \cdot \_\_\_\_$

$= \_\_\_\_$

$x = \_\_\_\_$ is the solution of the equation $7x = \frac{4}{7}$.

Name: _____ Date: _____

54. $9m = \frac{5}{6}$

$9m = \frac{5}{6}$

$9m$ ◯ _____ $= \frac{5}{6}$ ◯ _____

$m = \frac{5}{6}$ ◯ _____

$=$ _____

$m =$ _____ is the solution of the equation $9m = \frac{5}{6}$.

55. $3b = \frac{2}{7}$

56. $4s = \frac{8}{9}$

57. $\frac{3}{4} = 9y$

58. $\frac{4}{5} = 6x$

59. $8v = \frac{6}{7}$

60. $\frac{10}{11} = 5w$

Name: _____ Date: _____

Lesson 8.3 Solving Simple Inequalities

Complete with =, >, or <.

1. 16 ☐ −20

2. 87 ☐ 78

3. 35 · 6 ☐ 6 · 35

4. 60 ÷ 20 ☐ 20 ÷ 60

5. −5 ☐ −1

6. −12 ☐ 9

Use substitution to determine four solutions of each inequality. Then represent the solutions of each inequality on a number line.

Example

$y > 7$

When $y =$ 8, $y > 7$ is true.

When $y =$ 9, $y > 7$ is true.

When $y =$ 15, $y > 7$ is true.

When $y =$ 98, $y > 7$ is true.

To find possible solutions of the inequality $y > 7$, you need to find the values of y that make $y > 7$ true.

The inequality $y > 7$ is true for any value of y that is greater than 7.

The solutions can be represented on a number line as shown:

The empty circle at the end of the arrow above the number line indicates that 7 is NOT a solution of the inequality $y > 7$.

Name: _____ Date: _____

7. $g > 13$

When $g =$ _____, $g > 13$ is true.

When $g =$ _____, $g > 13$ is true.

When $g =$ _____, $g > 13$ is true.

When $g =$ _____, $g > 13$ is true.

The inequality $g > 13$ is true for any value of g that is _____ 13.

The solutions can be represented on a number line as shown:

8. $m < 28$

When $m =$ _____, $m < 28$ is true.

When $m =$ _____, $m < 28$ is true.

When $m =$ _____, $m < 28$ is true.

When $m =$ _____, $m < 28$ is true.

The inequality $m < 28$ is true for any value of m that is _____ 28.

The solutions can be represented on a number line as shown:

Name: _____ Date: _____

9. $p < 45$

10. $s > 28$

11. $a > -57$

12. $g < -93$

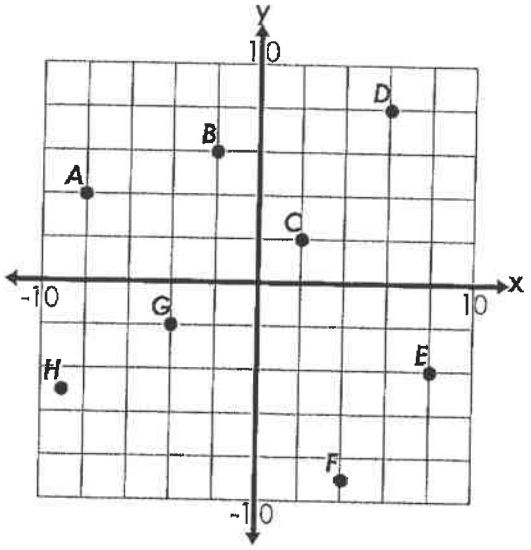
13. $f > -86$

14. $m < -105$

Name: _____

Coordinate Grid

Give the coordinates for the following points.

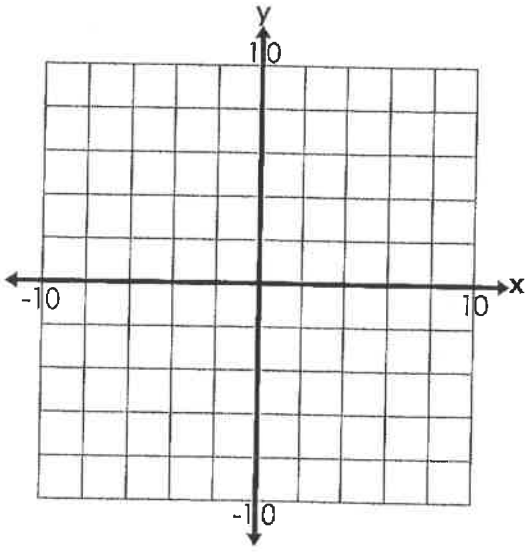


1. *C* _____
2. *H* _____
3. *B* _____
4. *E* _____
5. *G* _____
6. *D* _____
7. *A* _____
8. *F* _____

Tell which quadrant each of the following points is located in: **I, II, III,** or **IV.**

9. (15, -12) _____
10. (-9, 17) _____
11. (20, 10) _____
12. (-6, -23) _____
13. (30, -8) _____
14. (-5, -5) _____
15. (18, 10) _____
16. (-14, -2) _____
17. (-8, 35) _____

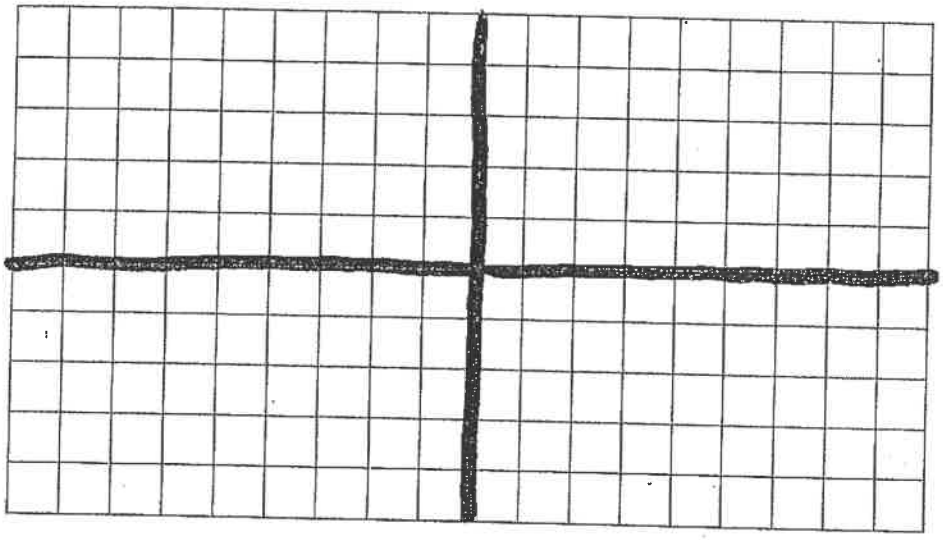
Plot and label the following points.



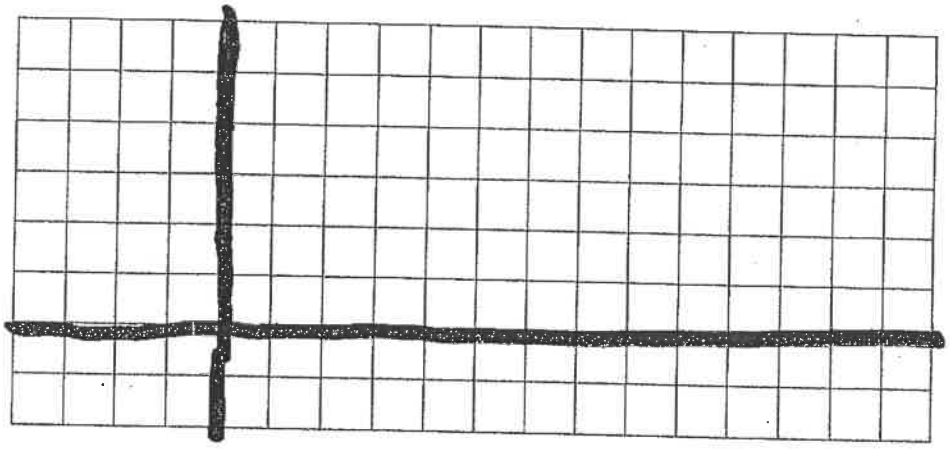
18. *I* (8, -4)
19. *J* (-2, -4)
20. *K* (-8, 10)
21. *L* (6, 6)
22. *M* (-5, -9)
23. *N* (9, 1)
24. *O* (-4, 3)
25. *P* (6, -8)

Name: _____ Date: _____

8. Square *EFHG* is plotted on a coordinate plane. The coordinates of point *E* are (−2, 1) and the coordinates of point *F* are (2, 1). Find the coordinates of points *G* and *H* given these conditions:
   a) Points *G* and *H* are above points *E* and *F*.
   b) Points *G* and *H* are below points *E* and *F*.



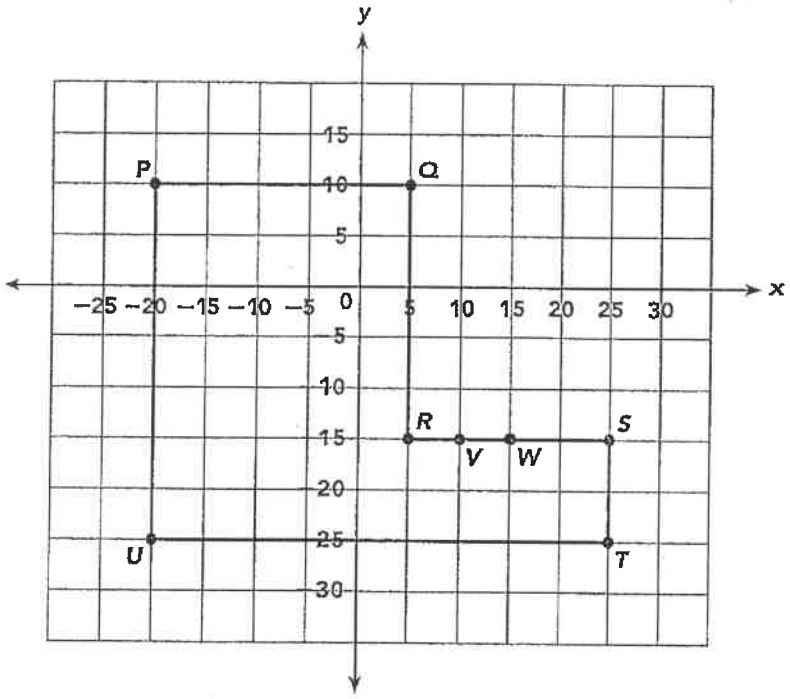
9. Triangle *ABC* is plotted on a coordinate plane. The coordinates of point *A* are (−2, 2), the coordinates of point *B* are (6, 2), and the coordinates of point *C* are (6, 5).
   a) What type of triangle is triangle *ABC*?
   b) Figure *ABCD* is a rectangle. Plot point *D* on the coordinate plane and give its coordinates.



Extra Practice

Name: _____ Date: _____

In the diagram, figure *PQRSTU* represents a field. The side length of each grid square is 5 feet. Use the diagram to answer questions 10 to 13.



10. Give the coordinates of points *P*, *Q*, *R*, *S*, *T*, and *U*.

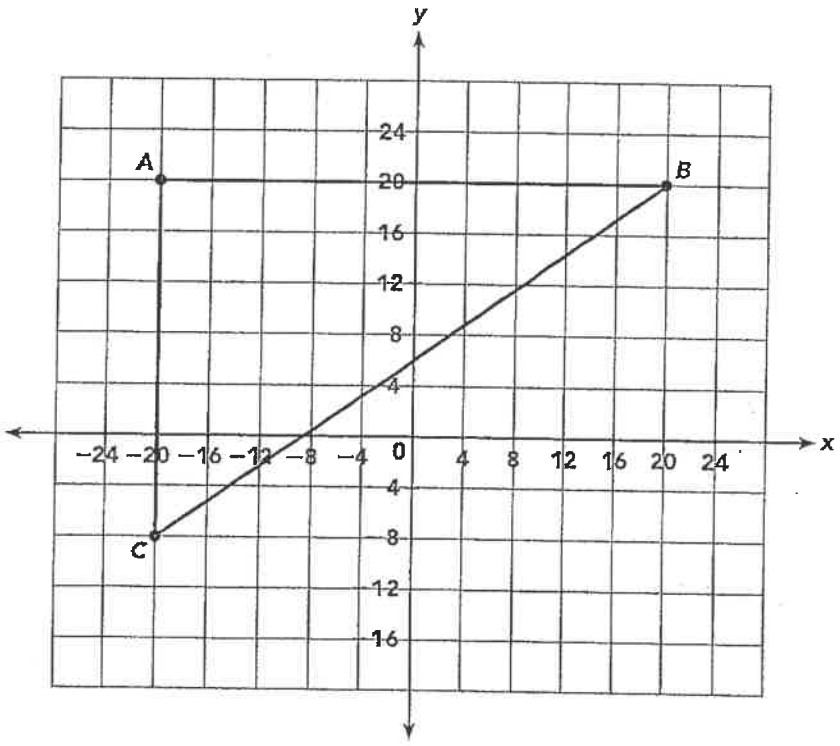
11. James and Rita build a picket fence around the field. They leave a 5-foot opening for the gate. What is the total length of the fence?

12. The gate, $\overline{VW}$, lies on $\overline{RS}$ and is 10 feet from point *S*. Give the coordinates of points *V* and *W*.

13. Find the area of the field.

Name: _____ Date: _____

In the diagram, figure *ABC* represents a playground. The side length of each grid square is 4 yards. Use the diagram to answer questions 14 to 17.



14. Give the coordinates of points *A*, *B*, and *C*.

15. There is a square sandbox *DEFG* in the playground. Point *D* is 20 yards from point *A*. $\overline{DE}$ is 8 yards in length. $\overline{EF}$ is also 8 yards in length and is parallel to $\overline{AC}$. Plot and label points *D*, *E*, *F*, and *G* on the coordinate plane.

16. If $\overline{BC}$ is approximately 49 yards, what is the perimeter of the playground?

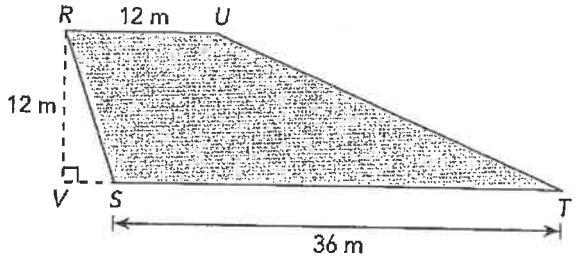
17. Tonya starts at point *E* and rides her scooter to point *A* then to point *C*. She continues around the perimeter of the playground toward point *B*. If she travels at 5 yards per second, how many seconds will it take her to get to point *B*?

Name: _____ Date: _____

Find the area of each trapezoid.

Example

In the figure, *RSTU* is a trapezoid. $\overline{RU}$ is parallel to $\overline{ST}$. *RV* is the height of the trapezoid. Find the area of *RSTU*.



Height = RV = 12 m

Sum of bases = RU + ST

= 12 + 36

= 48 m

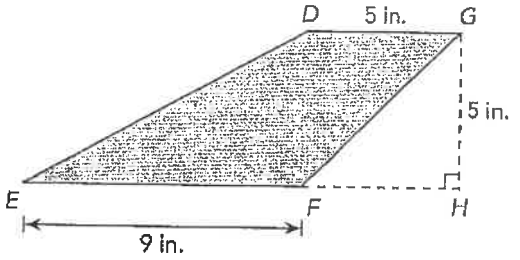
Area of trapezoid *RSTU* = $\frac{1}{2}h(b_1 + b_2)$

= $\frac{1}{2}$ · 12 · 48

= 288 m²

The area of trapezoid *RSTU* is 288 square meters.

7. In the figure, *DEFG* is a trapezoid. $\overline{DG}$ is parallel to $\overline{EF}$. *GH* is the height of the trapezoid. Find the area of *DEFG*.



Height = _____ = _____ in.

Sum of bases = _____ + _____

= _____ + _____

= _____ in.

Area of trapezoid *DEFG* = $\frac{1}{2}h(b_1 + b_2)$

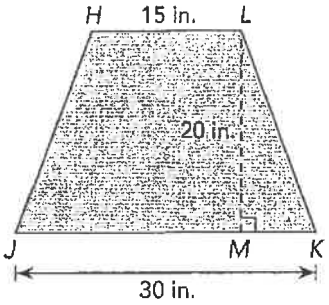
= $\frac{1}{2}$ · _____ · _____

= _____ in.²

The area of trapezoid *DEFG* is _____ square inches.

Name: _____ Date: _____

4. In the figure, *HJKL* is a trapezoid. $\overline{HL}$ is parallel to $\overline{JK}$. *LM* is the height of the trapezoid. Find the area of *HJKL*.



Height = _____ = _____ in.

Sum of bases = _____ + _____

= _____ + _____

= _____ in.

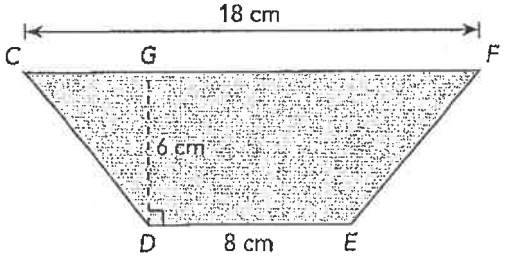
Area of trapezoid *HJKL* = $\frac{1}{2}h(b_1 + b_2)$

= $\frac{1}{2}$ · _____ · _____

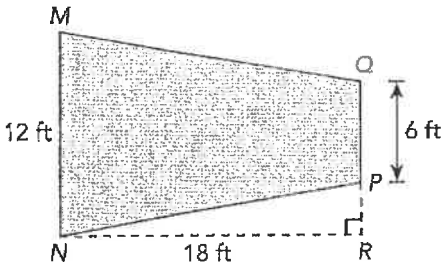
= _____ $in.^2$

The area of trapezoid *HJKL* is _____ square inches.

5.



6.

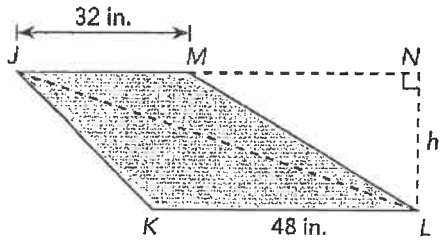


Name: _____ Date: _____

Solve. Show your work.

Example

The area of trapezoid *JKLM* is 1,000 square inches. $\overline{JM}$ is parallel to $\overline{KL}$.



a) Find the height of trapezoid *JKLM*.

Area of trapezoid $JKLM = \frac{1}{2}h(b_1 + b_2)$

$1{,}000 = \frac{1}{2} \cdot h \cdot (32 + 48)$

$1{,}000 = \frac{1}{2} \cdot h \cdot 80$

$1{,}000 = \frac{1}{2} \cdot 80 \cdot h$

$1{,}000 = 40 \cdot h$

$1{,}000 \div 40 = 40 \cdot h \div 40$

$25 = h$

The height of trapezoid *JKLM* is 25 inches.

b) Find the area of triangle *JLM*.

Height of triangle *JLM* = *NL* = 25 in.

Trapezoid *JKLM* has the same height, *NL*, as triangle *JLM*.

Area of triangle $JLM = \frac{1}{2}bh$

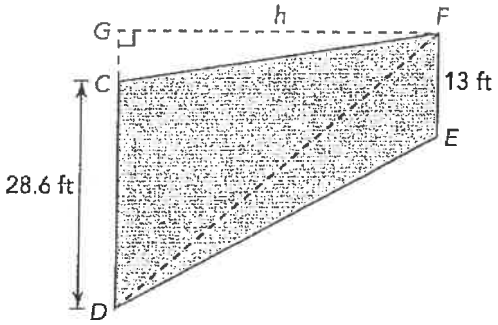
$= \frac{1}{2} \cdot 32 \cdot 25$

$= 400$ in.^{2}

The area of triangle *JLM* is 400 square inches.

Name: _____ Date: _____

11. The area of trapezoid *CDEF* is 832 square feet. $\overline{CD}$ is parallel to $\overline{FE}$.



a) Find the height of trapezoid *CDEF*.

Area of trapezoid $CDEF = \frac{1}{2}h(b_1 + b_2)$

_____ $= \frac{1}{2} \cdot h \cdot$ (_____ + _____)

_____ $= \frac{1}{2} \cdot h \cdot$ _____

_____ $= \frac{1}{2} \cdot$ _____ $\cdot h$

_____ $=$ _____ $\cdot h$

_____ $\div$ _____ $=$ _____ $\cdot h \div$ _____

_____ $= h$

The height of trapezoid *CDEF* is _____ feet.

b) Find the area of triangle *FDE*.

Area of triangle $FDE = \frac{1}{2}bh$

$= \frac{1}{2} \cdot$ _____ $\cdot$ _____

$=$ _____ ft^2

The area of triangle *FDE* is _____ square feet.

Name: _____

Area of a Triangle Questions

1. Jenny says the formula for finding the area of a triangle is $A=\frac{1}{2} \times b \times h$.

Chris says the formula for finding the area of a triangle is $A=\frac{b \times h}{2}$.

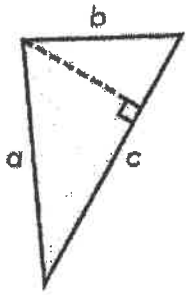
Who is correct? _____

Explain your answer.

_____

_____

2. Look at the triangle shown on the right.
The height is represented by the dotted line.



Which side of the triangle is the base? _____

Explain how you can tell which side is the base.

_____

_____

3. The height of a right triangle is exactly 4 cm.

The area of the triangle is 12 cm^2.

The base of the triangle should be _____ cm.

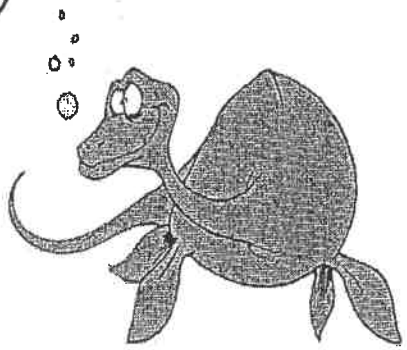
4. In the box below, draw a rectangle that is 10 cm long and 4 cm high.
Use a ruler and make sure your drawing is to scale.

What is the area of the rectangle? _____

Now draw a diagonal line to divide the rectangle
into two triangles. What is the area of each triangle? _____

Name: _____

Basic Algebra



Determine the value of the variable in each equation.

1. $6 + a = 12$

$a =$ _____

2. $7 - b = 2$

$b =$ _____

3. $11 + 14 = c$

$c =$ _____

4. $\frac{24}{d} = 3$

$d =$ _____

5. $10e = 110$

$e =$ _____

6. $\frac{f}{7} = 7$

$f =$ _____

7. $13g = 26$

$g =$ _____

8. $35 - h = 10$

$h =$ _____

9. $6 + i = 23$

$i =$ _____

10. $j - 17 = 7$

$j =$ _____

11. $\frac{42}{7} = k$

$k =$ _____

12. $4m = 32$

$m =$ _____

13. $\frac{72}{n} = 9$

$n =$ _____

14. $33 + 66 = p$

$p =$ _____

15. $\frac{q}{8} = 5$

$q =$ _____

★ $5 + r = 14 - 3$

$r =$ _____

★ $11 + 4 = 3s$

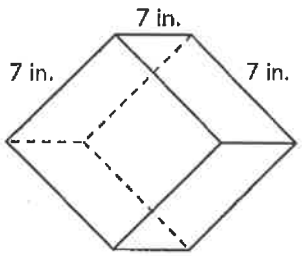
$s =$ _____

Name: _____ Date: _____

Lesson 12.3 Volume of Prisms

Find the volume of each rectangular prism.

1.

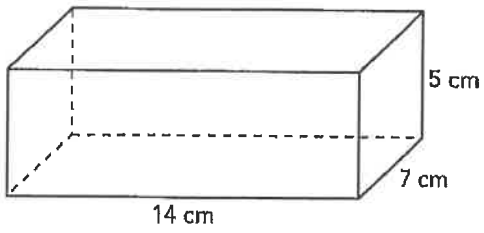


Volume

= _____ × _____ × _____

= _____ $in.^3$

2.



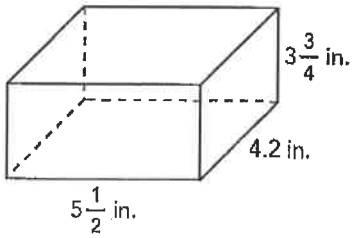
Volume

= _____ × _____ × _____

= _____ cm^3

Example

A rectangular prism measures $5\frac{1}{2}$ inches by 4.2 inches by $3\frac{3}{4}$ inches. Find the volume of the prism.



Length = $5\frac{1}{2}$ in.

Width = 4.2 in.

Height = $3\frac{3}{4}$ in.

Volume = ℓwh

The **volume** of any rectangular prism of length ℓ, width w, and height h is given by $V = \ell wh$

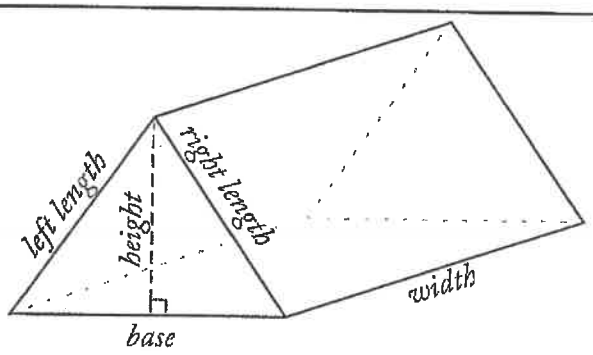
= $5\frac{1}{2}$ × 4.2 × $3\frac{3}{4}$

= $86\frac{5}{8}$ $in.^3$

The volume of the prism is $86\frac{5}{8}$ cubic inches.

Name: _____

Surface Area of a Triangular Prism



area of **front triangle** = $\frac{1}{2}(b \times h)$

area of **back triangle** = $\frac{1}{2}(b \times h)$

area of **front triangle + back trangle** = $b \times h$

area of **right side** = $right\ l \times w$

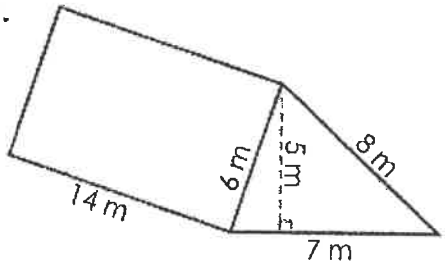
area of **left side** = $left\ l \times w$

area of **bottom** = $b \times w$

$$\textit{Surface Area} = (b \times h) + (right\ l \times w) + (left\ l \times w) + (b \times w)$$

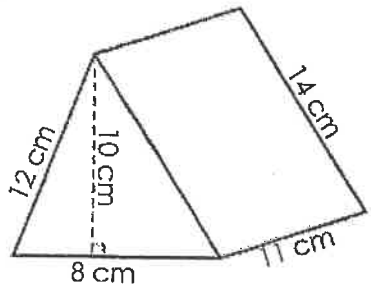
Calculate the *Surface Area* (*S.A.*) for each triangular prism by using the formula $S.A. = (b \times h) + (right\ l \times w) + (left\ l \times w) + (b \times w)$.

a.



a. _____

b.



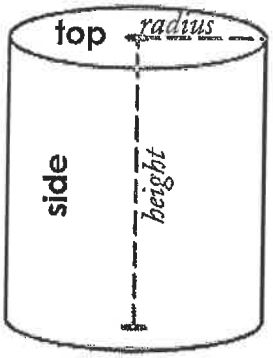
b. _____

c. *base* = 20 mm
height = 15 mm
right length = 24 mm
left length = 18 mm
width = 30 mm

c. _____

Name: _____

Surface Area of a Cylinder



$\pi = 3.14$

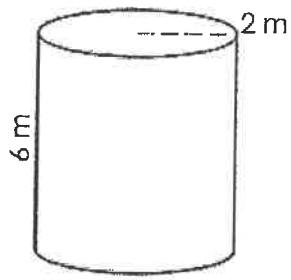
area of **top** = πr^2
area of **bottom** = πr^2
area of **top** + **bottom** = $2\pi r^2$

area of **side** = *circumferance* x *height*
circumferance = $2\pi r$
area of **side** = $2\pi rh$

$$\textit{Surface Area} = 2\pi r^2 + 2\pi rh$$

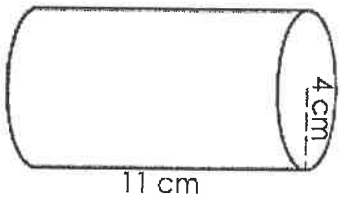
Calculate the *Surface Area* (*S.A.*) for each cylinder by using the formula $S.A. = 2\pi r^2 + 2\pi rh$. Use 3.14 for π.

a.



a. _____

b.



b. _____

c. *radius* = 12 mm

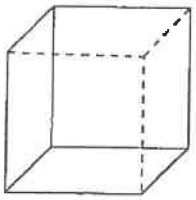
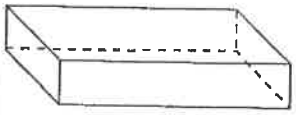
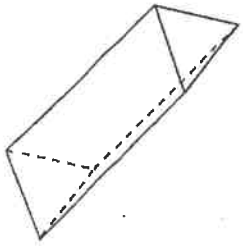
height = 3 mm

c. _____

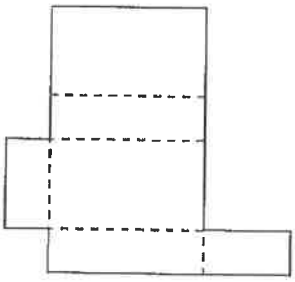
Name: _____ Date: _____

Match each solid with its net(s). There may be more than one net of each solid.

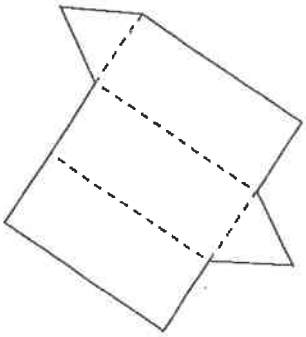
Example

Solid			
Net	c, d	a, e	b, f

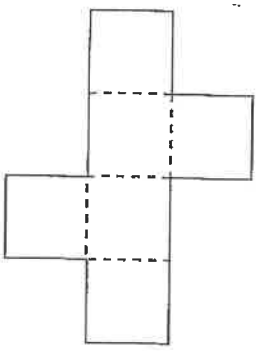
a)



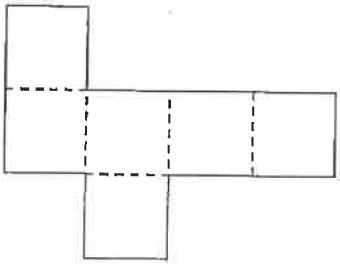
b)



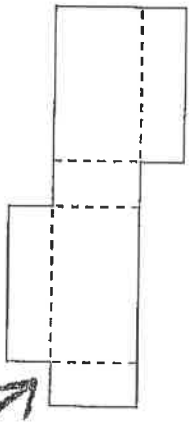
c)



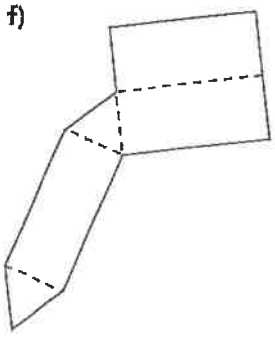
d)



e)



f)

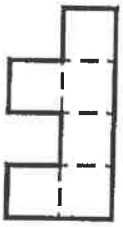


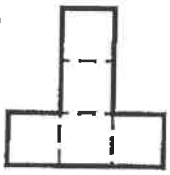
A **net** is a plane figure that can be folded to make a solid. This is a net.

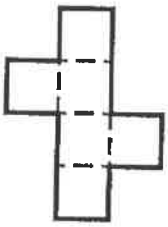
Name: _____

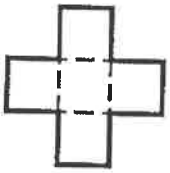
Nets

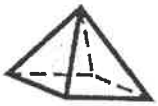
1. Which figure forms a net for a cube? 

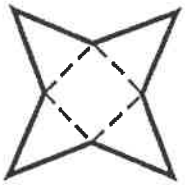
a. 

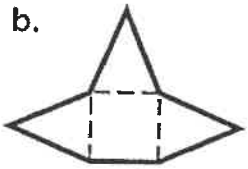
b. 

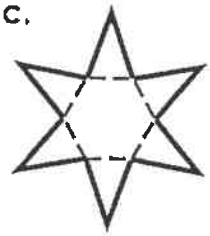
c. 

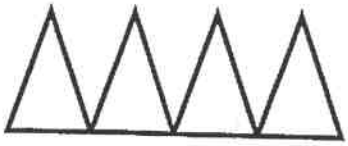
d. 

2. Which figure forms a net for a rectangular pyramid? 

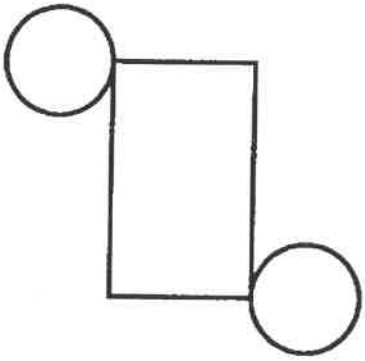
a. 

b. 

c. 

d. 

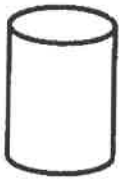
3. Which solid shape is made by the net pictured below?



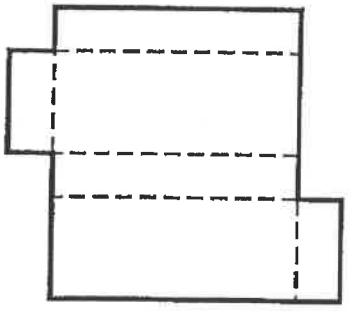
a. 
sphere

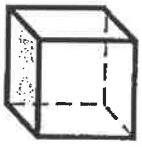
b. 
rectangle prism

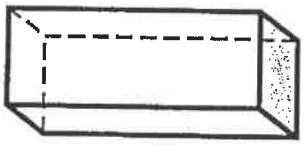
c. 
cone

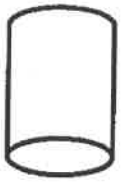
d. 
cylinder

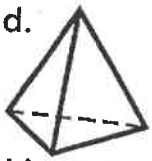
4. Which solid shape is made by the net pictured below?



a. 
cube

b. 
rectangular prism

c. 
cylinder

d. 
triangular pyramid

8.

Fifty students were asked their level of satisfaction with the school's music program. The following responses were the choices provided:

(a) very satisfied (b) satisfied (c) neutral (d) dissatisfied (e) very dissatisfied.

Level of Satisfaction	Tally	Frequency
Very satisfied	//	?
Satisfied	𝍸 //	?
Neutral	𝍸 𝍸 𝍸 𝍸 ////	?
Dissatisfied	𝍸 𝍸 ////	?
Very dissatisfied	////	?

a) How many students are satisfied or very satisfied?

b) Based on the results of the survey, should the school think about changing the program? Explain your reasoning.

Name: _____ Date: _____

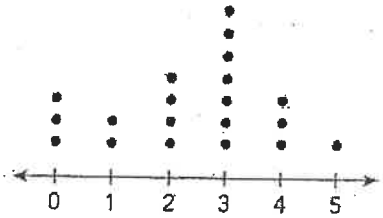
Lesson 13.2 Dot Plots

Represent each set of data with a dot plot. Give each dot plot a title.

Example

A group of 20 students were asked the number of times they visited the library last week. The results are recorded in the table below.

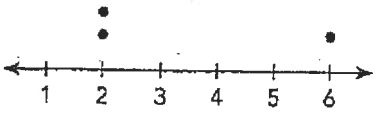
Number of Visits to the Library	0	1	2	3	4	5
Number of Students	3	2	4	7	3	1



Number of Visits to the Library

1. A group of 20 teenagers were asked the number of brothers and sisters they have. The results are recorded in the table below.

Number of Brothers and Sisters	1	2	3	4	5	6
Number of Teenagers	0	2	6	9	2	1



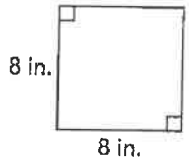
_____

Name: _____ Date: _____

Lesson 12.2 Surface Area of Solids

Find the area of each figure.

1.

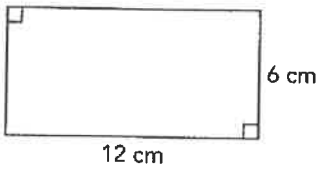


Area= length x width

Area = _____ x _____

= _____ $in.^2$

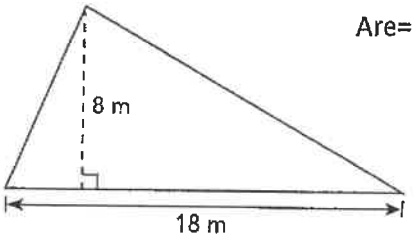
2.



Area = _____ x _____

= _____ cm^2

3.

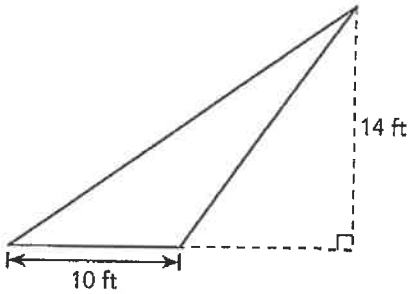


Are= ½ bh

Area = $\frac{1}{2}$ x _____ x _____

= _____ m^2

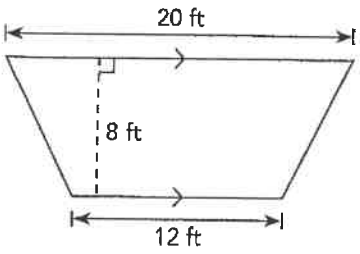
4.



Area = $\frac{1}{2}$ x _____ x _____

= _____ ft^2

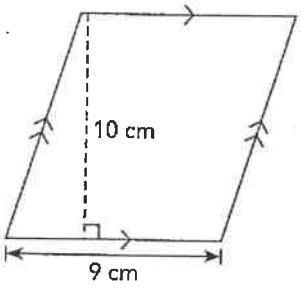
5.



Area= ½ h (b+b)

Area = $\frac{1}{2}$ x _____ x (_____ + _____)

= _____ ft^2



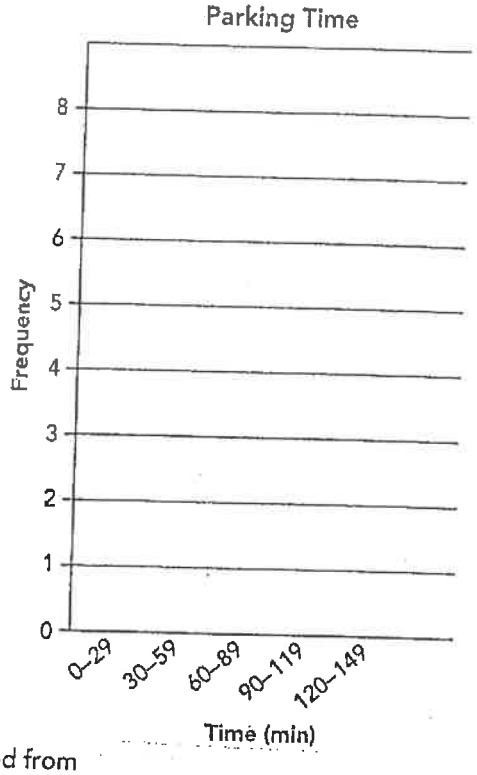
Area = _____ x _____

= _____ cm^2

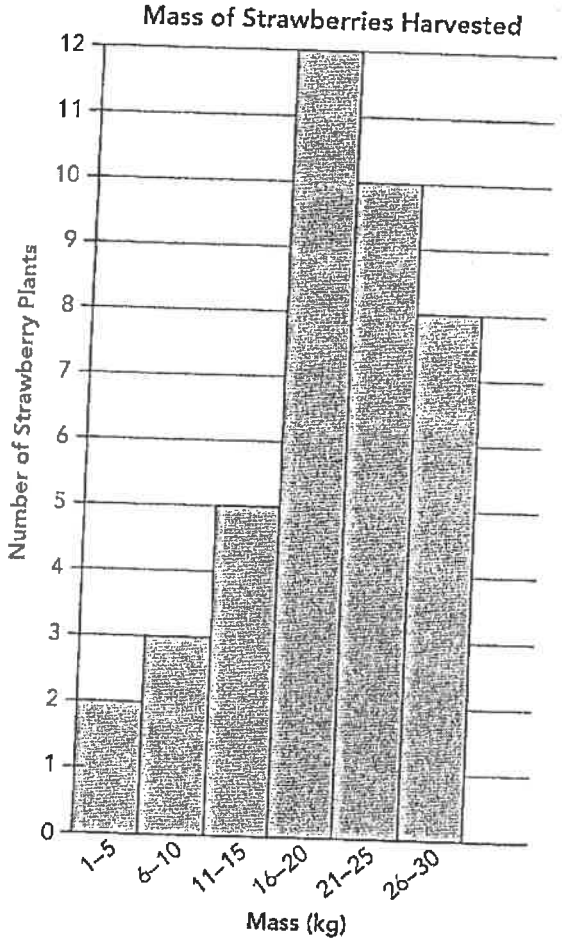
Name: _____ Date: _____

1. The table shows the parking times (in minutes) of 20 cars. Create Histogram

Parking Time (min)	Frequency
0–29	3
30–59	5
60–89	8
90–119	3
120–149	1



5. The histogram shows the mass of strawberries harvested from 40 strawberry plants.



Most of the strawberry plants harvested _____ to _____ kilograms of strawberries. The mass of strawberries harvested spans from _____ to _____. So, the range is _____. The histogram has a tail to the _____. Most of the data is to the left of the most frequent value. So, the histogram is _____.

Use the data in the table to answer questions 9 to 12.

The table shows the high temperatures in degrees Celsius for the past 16 days.

5	7	11	3	6	4	4	8
11	10	3	3	10	9	11	14

9. Create a dot plot for the data.

10. Find the mean and median of the data set. Do not round the mean.

11. Why is the mean lower than the median?

12. Which central tendency would you use to describe the distribution of the data? Explain your reasoning.

Name: _____ Date: _____

Complete the table and find the mode(s) of each data set.

Example

The students in Mrs. Thompson's class wore colored T-shirts for a school event. The colors of the T-shirts were recorded by Mrs. Thompson as R (red), B (blue), G (green), and Y (yellow). These are the data she recorded.

R	B	G	B	Y	R	G	R	B	Y
B	R	R	Y	B	G	Y	B	G	B

T-shirts in Mrs. Thompson's Class

Color	Number of T-shirts
Red	5
Blue	7
Green	4
Yellow	4

From the table, most of the children wore blue T-shirts.

The mode of this data set is blue.

6. An animal shelter volunteer counted the number and the type of animals currently at the shelter. She uses the following notation to record the data: D (dogs), C (cats), H (hamsters), G (guinea pigs), and R (rabbits). These are the data she recorded.

R	H	D	D	C	R	D	R	H	H
D	C	C	R	H	G	D	H	G	C

Animals in a Shelter

Animal	Frequency
Dogs	
Cats	
Hamsters	
Guinea pigs	
Rabbits	

From the table, most of the animals are _____ and _____.

The modes of this data set are _____ and _____.