Name _____Date _____

VOLUME 4 LESSON 1 SUPPLEMENTAL WORKSHEET

Draw the following pictures:

1. $\angle$ ABC with the vertex labeled B.

2. $\overleftrightarrow{DF}$ with point E in the center.

3. $\overrightarrow{GI}$ with endpoint G, and point H in the center.

4. $\overleftrightarrow{JM}$ with $\overline{KL}$.

5. $\angle$ NOP with vertex O.

6. $\overleftrightarrow{QV}$ with $\overline{RS}$ and $\overline{TU}$.

7. $\angle$ WXY with vertex X. Add $\overrightarrow{XZ}$ to the center of $\angle$ WXY.

Answer the following questions.

8.   What do the arrows on the ends of a line represent? _____

9.   If two endpoints join to form an angle, what is the new name for those two endpoints? _____

10.   What do you call a line with an endpoint on one end and an arrow on the other end? _____
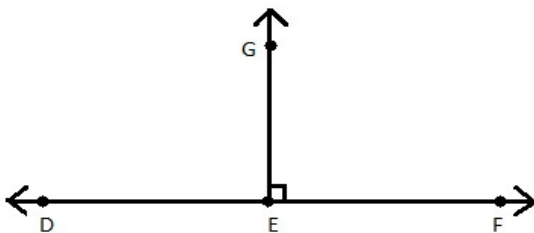
VOLUME 4 LESSON 2 SUPPLEMENTAL WORKSHEET

Answer the following questions about this picture:

110 degrees
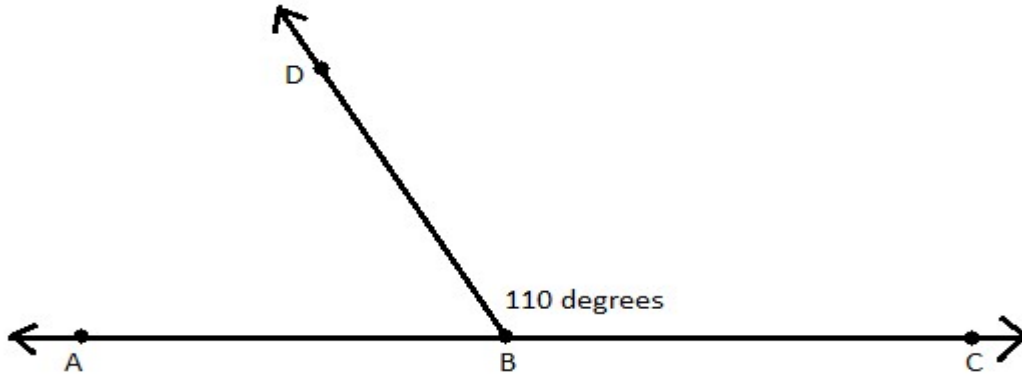
1.   What is the measurement of ∠ABD? _____

2.   Is ∠ DBC obtuse or acute?_____

3.   Is ∠ ABD obtuse or acute? _____

4.   Is BD a line, a ray or an angle? _____

5.   Name the angle adjacent to ∠DBC. _____

Answer the next three questions about this picture.
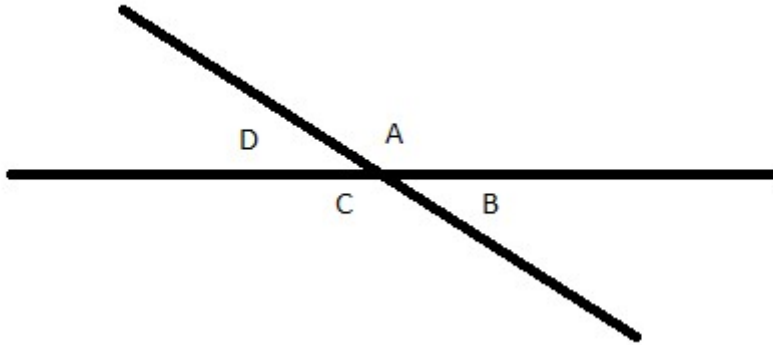

6.   What is the measurement of ∠ GEF?_____
7.   What is the measurement of ∠ GED? _____
8.   What type of angle is ∠GEF? _____

Name _____Date _____

VOLUME 4 LESSON 3 SUPPLEMENTAL WORKSHEET

Answer the following questions about this picture:

1.   If angle A is 135° what is the measurement of angle C? _____

2.   If angle D is 45° what is the measurement of angle B? _____

3.   Is angle B obtuse or acute? _____

4.   What angle is opposite angle D? _____

5.   Name an angle adjacent to angle B. _____

6.   If angle B is 40° what is the measurement of angle A? _____

7.   If angle C is 110° what is the measurement of angle D? _____

8.   If angle D is 37° what is the measurement of angle A? _____

9.   What angle is opposite angle C? _____

10.   What is the total measurement of angles C and B together? _____

Name _____ Date _____

VOLUME 4 LESSON 4 SUPPLEMENTAL WORKSHEET

1.   All triangles have three angles. If you measure all three angles and add
        them together, what will be the total? _____

2.   I'm thinking of a triangle, two of the angles are 60°. What kind of triangle is
        it? _____

3.   I have a piece of typing paper. I make one diagonal cut with a pair of
        scissors and cut off one of the corners. What kind of triangle did I cut?
        _____

4.   I drew a triangle. Two of the sides are 3" long. What type of special
        triangle did I draw? _____

5.   I have a right triangle. One of the angles measures 50°. What are the
        measurements of the other two angles? _____

6.   The measurements of the angles in a triangle are 30°, 60° and 90°. What
        type of triangle is it? _____

7.   What does it take for a triangle to be called a right triangle? _____

8.   What does it take for a triangle to be called an equilateral triangle?
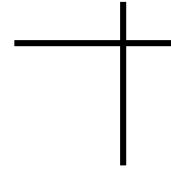   _____

9.   What does it take for a triangle to be called an isosceles triangle?
        _____

10   Is it possible for one triangle to be all three special triangles? _____

11.   Draw one isosceles, one equilateral, and one right triangle on the back.

Name _____Date _____

VOLUME 4 LESSON 5 SUPPLEMENTAL WORKSHEET

1.   Are these two lines parallel or perpendicular? _____

2.   Are these two lines parallel or perpendicular? _____

3.   I have a triangular shape. When I line up one of the triangle's corners with the corner of a book, they match up perfectly. What kind of special triangle do I have? _____

4.   I have a triangle with two 60° angles. What type of special triangle is it? _____

5.   I drew a 3-foot-tall triangle. The base of the triangle is 18 inches. What type of special triangle is it? _____

6.   I have a right triangle. One of the angles measures 40°. What is the measurement of the other two angles? _____

7.   I have a triangle with two 70° angles. What type of triangle is it? _____

8.   What is the measurement of angle x?   x   38°
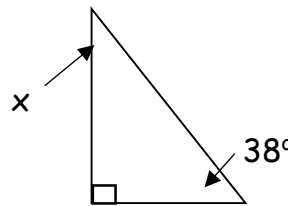
9.   I have a triangle that is not a special triangle. One angle measures 42° the other angle measures 110°. What is the measurement of the third angle? _____

10.   I have a shape with four 90° angles. Two of the four sides measure 2", the other two sides measure 4". What kind of shape do I have?_____
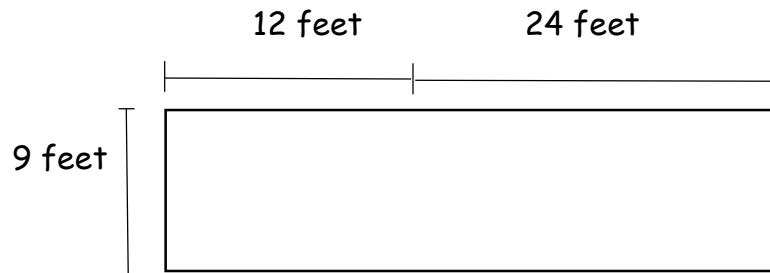
Name _____Date _____
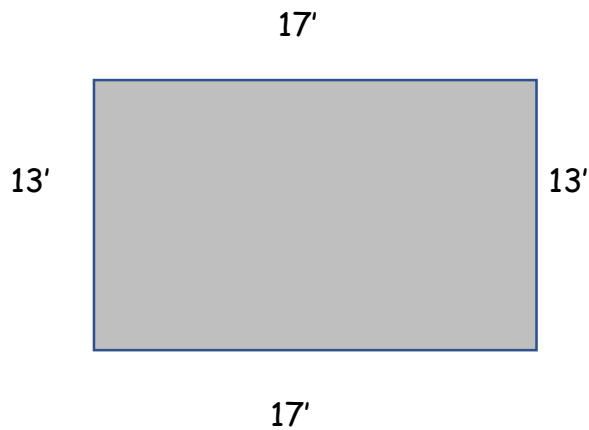
VOLUME 4 LESSON 6 SUPPLEMENTAL WORKSHEET

1.   Use A = bh to find the area of this square. _____

10 feet
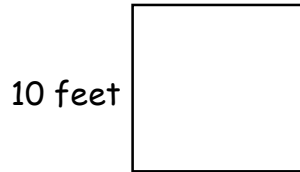
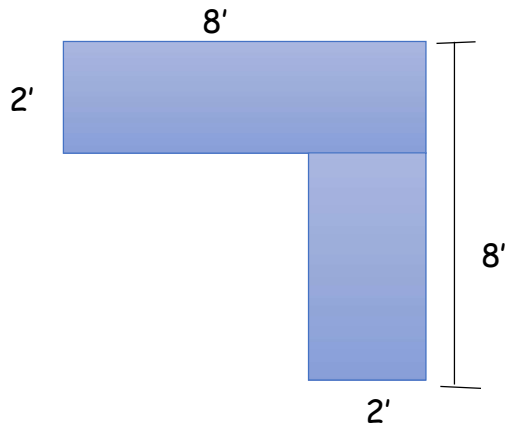2.   Find the area of this rectangle. _____

12 feet   24 feet

9 feet

3.   The living room walls have the following measurements:
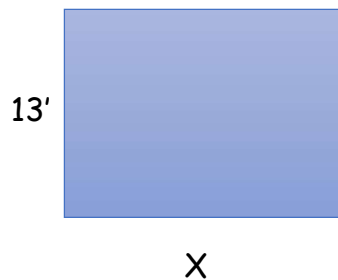
17'

13'   13'

17'

How many square feet of carpet will be needed to cover the whole floor? _____
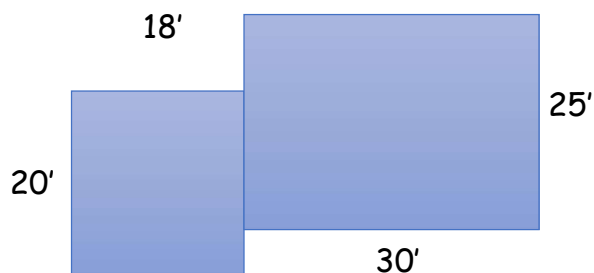
VOLUME 4 LESSON 6 SUPPLEMENTAL WORKSHEET PG 2

4. Below are the measurements for some kitchen countertops. How many square feet of granite are needed to cover the counters? _____

8'

2'

8'

2'

5. Below is an outline of a 182 square foot room. What is the missing measurement? X = _____

13'

X

6. One can of paint will cover 600 square feet. How many cans of paint will be needed to paint the ceiling of the rooms below? _____

18'

25'

20'

30'

7. A builder charges $220 per square foot to build a house. How much will he charge to build a one-story house that measures 32 feet by 48 feet? $_____

8. A cell phone measures 6.8 inches by 2.8 inches. What is the area of the front of the phone? _____

9. Gia is making clothes for dolls. She needs 1 square foot of material per outfit. How many outfits can Gia make with a piece of material that measures three feet by eight feet? _____

3'

8'

10. Ian is building a fort out of stackable plastic bricks. The fort is four feet wide, but the other measurement is unknown. He was able to fit 20 foam tiles on the floor of the fort. Each foam tile is one square foot. What are the measurements of the fort? _____
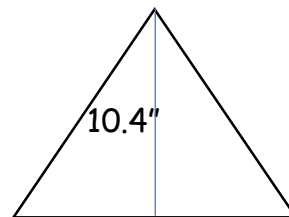
x

4 feet
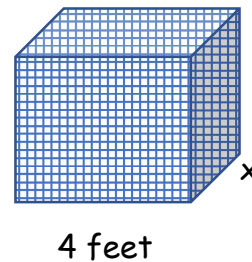
VOLUME 4 LESSON 7 SUPPLEMENTAL WORKSHEET

1. The right triangle below has a base of 12". The height is 16". What is the area of the triangle? _____

    16"

    12"
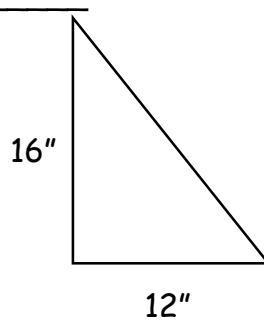
2. The area of the equilateral triangle below is approximately 62.4 square inches. What is the length of each side? _____

    10.4"

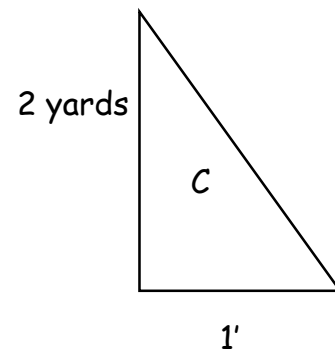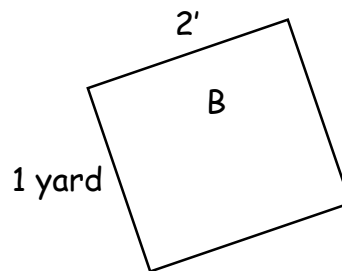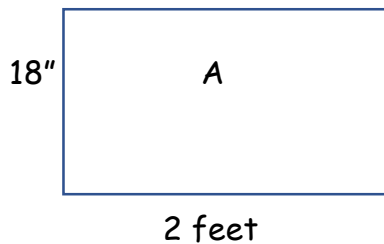3. An isosceles triangle has a base that measures 4 feet and is 7 feet tall. What is the area of the triangle? _____

4. You are given enough paint to cover 80 square feet. Which of the three triangles below will you be able to completely cover in paint? _____

A.

11'

20'

B.

15'

11'

C.   15.5'

10'
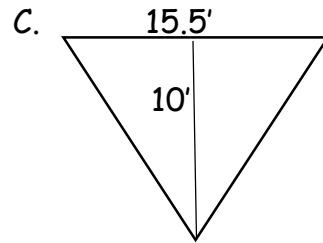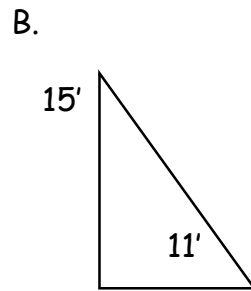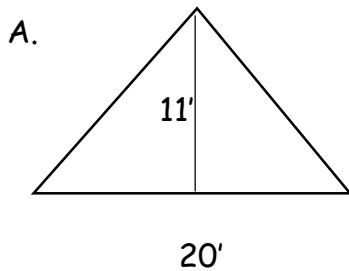
5. Which shape below has the largest area? (Look at the units). _____

18"   A

2 feet

2'

B

1 yard

2 yards

C

1'

6.   Below is a picture of a doghouse. The triangular roof is five feet tall, and the base is 12 feet long. The square shaped house is eight feet tall and ten feet wide. The door opening is three feet tall and three feet wide. What is the area of the front of the doghouse minus the door opening? (Find the area of the triangle plus the square, minus the area of the door). _____
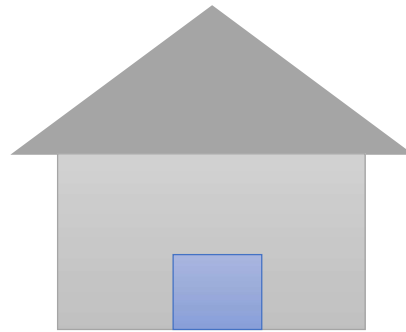
7.   Isabella just finished her latest book, The Martineau Mysteries, and she is now designing the cover. The book is nine inches tall and four inches wide. There will be a five-inch-tall triangle shape at the base of the cover that will be printed yellow. The printer needs to know how many square inches of yellow ink will be used. Find the area of the triangle. _____
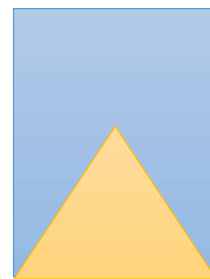
8. Cooper is coding a video game. In one of the levels, he needs to build a wall out of digital blocks. Each block is 300 pixels long and 100 pixels tall. The wall will be built ten blocks wide and ten blocks tall. What is the area of the wall in square pixels? (The picture is not accurate). _____

100 pxl.

300 pxl.
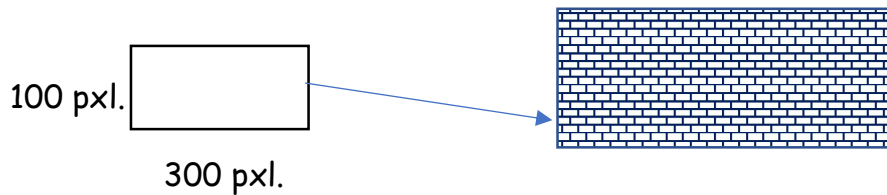
9. Name the triangle that is described as either Right, Isosceles or Equilateral.

a. In this type of triangle, two of the angles are 70°. What kind of triangle is it? _____

b. In this type of triangle, two of the angles are 60°. What kind of triangle is it? _____

c. In this type of triangle, one angle is 35° and the other one is 55°. What kind of triangle is it? _____

d. In this type of triangle, one angle is 90° and the other one is 50°. What kind of triangle is it? _____

10. Fill in the blanks.

10'

5'

_____sq. feet

8"

75°   75°

____"

5"

20°

80°

_____°
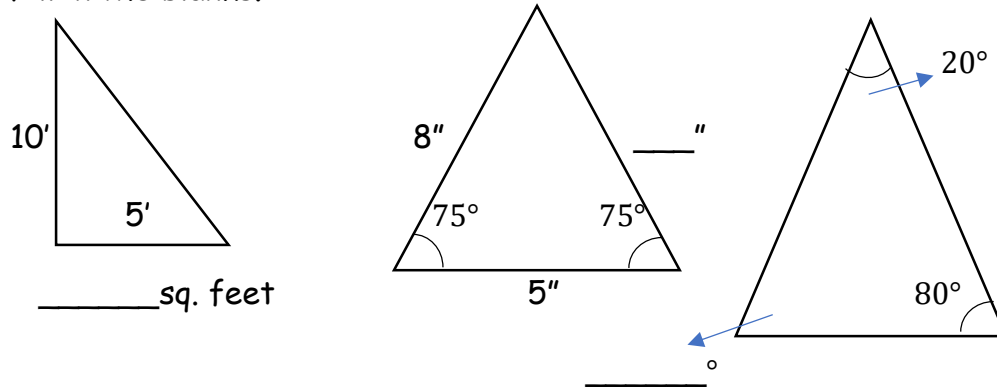
Name _____Date _____

VOLUME 4 LESSON 8

1. A polygon with eight equal sides is called _____.

2. A polygon with three EQUAL sides is called an _____ _____.

3. Draw a pentagon the best you can.

4. How many sides does a hexagon have? _____

5. A three-sided polygon with one 90° angle is called a _____ _____.

6. A four-sided polygon with four equal length sides is a _____.

7. A Stop Sign is what shape? _____

8. There is a five-sided Government building in Virginia. What is it called? _____

9. A three-sided polygon with two equal base angles and one smaller angle is called an _____ _____.

10. Give a number that matches the each of the polygon prefixes.

TRI = _____   HEX = _____ OCT = _____ PENT = _____

Name _____Date _____

VOLUME 4 LESSON 9

1. Write the letter C next to the hypotenuse of each triangle below.
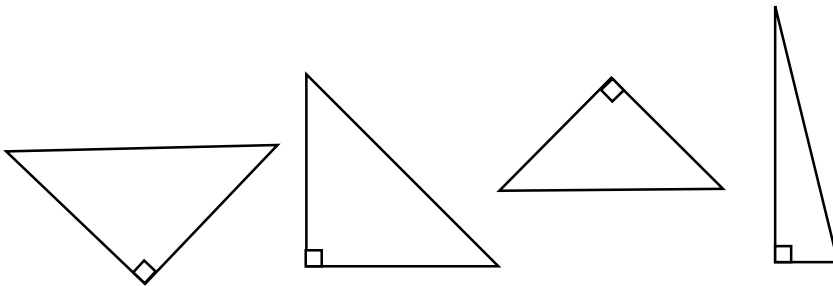
2. Write the formula for the Pythagorean Theorem.

_____

3. Solve the following.

$3^2 =$	$5^2 =$	$4^2 =$	$8^2 =$
$9^2 =$	$7^2 =$	$6^2 =$	$2^2 =$
$10^2 =$	$12^2 =$	$11^2 =$	$15^2 =$

$\sqrt{81} =$	$\sqrt{64} =$	$\sqrt{9} =$	$\sqrt{36} =$

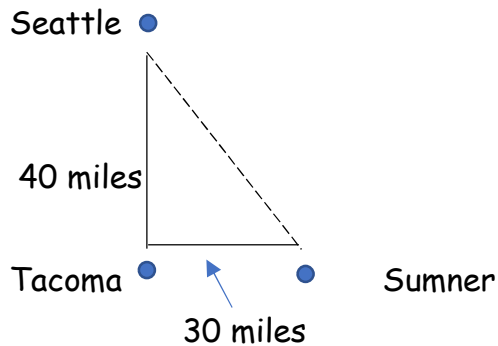|			
$\sqrt{144} =$	$\sqrt{100} =$	$\sqrt{225} =$	$\sqrt{121} =$

4. A pilot flew 40 miles from Seattle to Tacoma. Later that day, he flew 30 miles to Sumner. He plans to fly straight back to Seattle. How many miles is it from Sumner to Seattle according to the map below? Hint: Find the triangular shape on the map. _____

Seattle ●

40 miles

Tacoma ●   ●   Sumner

30 miles

5. Chloe built a tent in the woods. She wants to cover the tent with a 25-foot tart to protect it from the rain. Find the length of the sides of the tent below and then answer the question below.

TARP

← 25 feet long →

8 feet

← 12 feet →
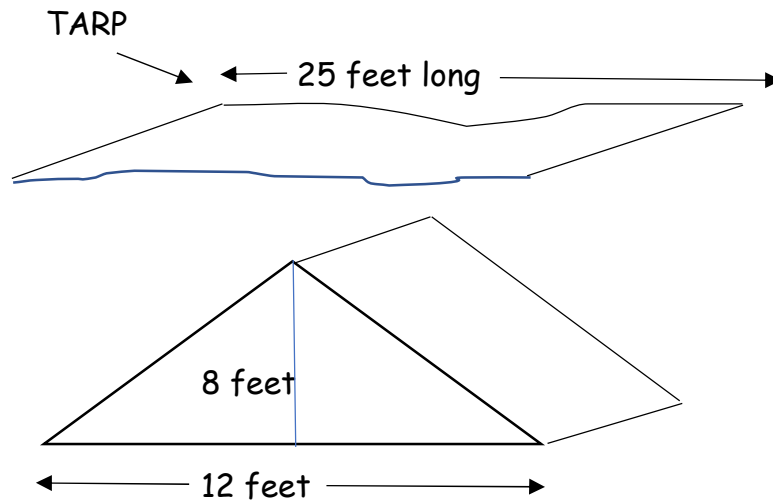
The 25-foot-long tarp is: _____

a.) too small to cover the sides of the tent.

b.) too long leaving some of the tarp on the ground.

c.) just the right length.

VOLUME 4 LESSON 9 page 3

6. Below is a picture of a garage. The builder needs you to mathematically figure out two things for him. First, he plans to fill in the triangular area above the garage doors with shingles. How many square feet of shingles should he buy? Second, he needs to know the area of the rooftop. Find the length of the side of the roof and then find the area of BOTH sides of the roof.

30 feet

Blue board is 24 feet

9'
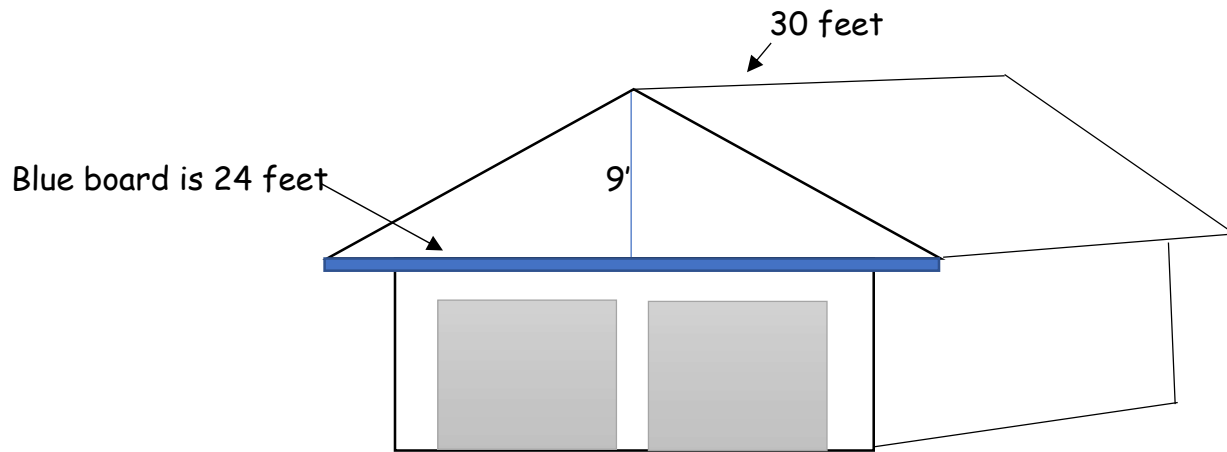
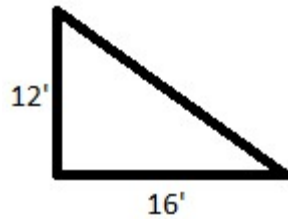_____ Square Feet of Shingles

_____ Square Feet of Rooftop

7. What is the length of the hypotenuse of a right triangle with sides that measure 24" and 32"? _____

What is the area of that same triangle? _____-

Name _____Date _____
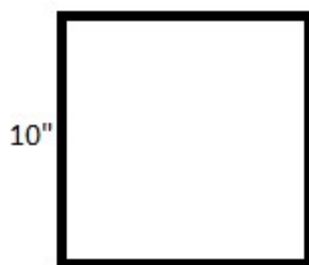
VOLUME 4 LESSON 10

1.   Use the 3-4-5 triangle secret to find the length of this hypotenuse.

2.   Use the Pythagorean Theorem to find the length of this hypotenuse.
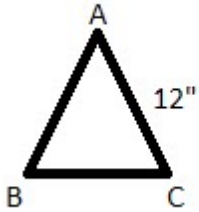

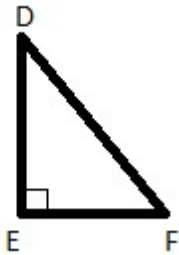
3.   Find the diagonal length of the square below.

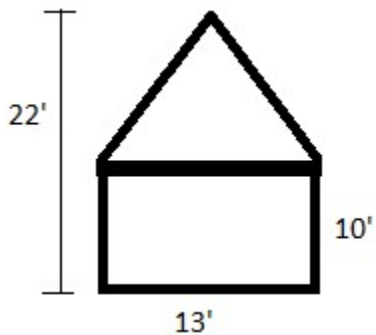

4.   What type of triangle has an hypotenuse? _____

5. Triangle ABC is an isosceles triangle. What is the length of side AB?

A
12"
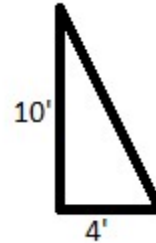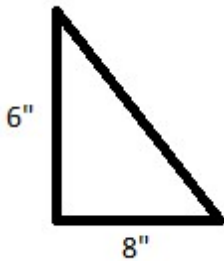B   C

6. What is the measurement of∠ D if ∠ F = 40°?

D
E   F

7. A gallon of paint will cover 150 square feet. Will 1 gallon be enough paint to cover this surface?

22'
10'
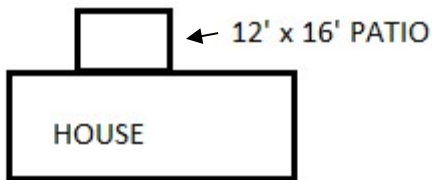13'

8. Use the Pythagorean Theorem to find the length of the hypotenuse in the following triangles.

6"   8"   3"   11"   10'   4'

9. I want to put a concrete patio next to my house. It must be square with the house, in other words, the edge of the patio needs to be perpendicular to the house. The patio will measure 12' x 16' and it will be placed next to the house as drawn below.

← 12' x 16' PATIO

HOUSE

Use the 3-4-5 triangle secret to find the diagonal measurement that will help you place the patio in the proper place.

10. Find the area of this right triangle.

3'   5'
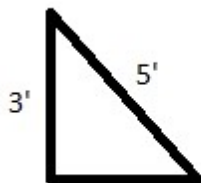
Name _____ Date _____

VOLUME 4 LESSON 11 SUPPLEMENTAL WORKSHEET

Use $C = d\pi$ to answer the following.

1. What is the circumference of a circle with a 2' diameter?
_____

2. What is the circumference of a circle with a 5' diameter?
_____

3. What is the circumference of a circle with a 9' diameter?
_____

4. What is the circumference of a circle with a 15' diameter?

_____

5. What is the circumference of a drum that measures 10" from one side to the other? _____

6. What is the circumference of a 4" bowl? _____

7. What is the circumference of an 8" dinner plate? _____

8. What is the circumference of a 16" garbage pan lid? _____

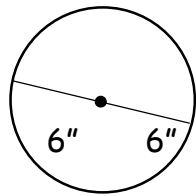Divide by pi to answer these questions.

9. What is the length of the diameter in a circle with a circumference of 6.28"?
_____

10. What is the length of the diameter in a circle with a circumference of 18.84 feet? _____
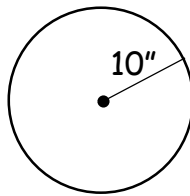
Name _____ Date _____

VOLUME 4 LESSON 12 SUPPLEMENTAL WORKSHEET

1. Use $A = \pi r^2$ and $C = d\pi$ to find both the circumference and area of the three circles below.
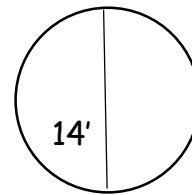

Area = _____

Circumference = _____

A = _____

C = _____

A = _____

C = _____

2. A horse is tethered to a pole with a 16-foot rope. If the horse pulls the rope tight and walks in one complete circle, how many feet will the horse have walked? _____

3. A circle-shaped cover is needed to cover a swimming pool that measures 24' across. The only circle-shaped pool cover available at the store measures 600 square feet. Is that cover big enough to cover the pool? _____

4. A circular dance floor with a diameter of 35 feet needs to be replaced. How many square feet of flooring will be needed to replace the whole floor? _____

5. A farmer needs to cover as much of his garden as possible. He has two tarps to choose from; One is a 13.5' square-shaped tarp, the other one is a 15' circular tarp. Which tarp will cover more of his garden? _____

6. A 12" target has three rings. The smallest ring, the bullseye, is 2" from one side to the other. The other circle measures 6". Which of the three rings has the most area? (Be sure to subtract the smaller circle's area from the larger circles). _____
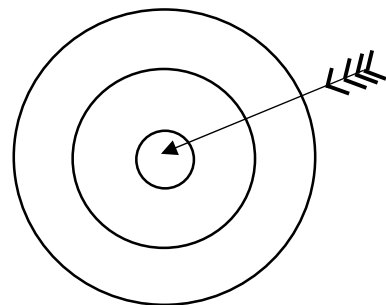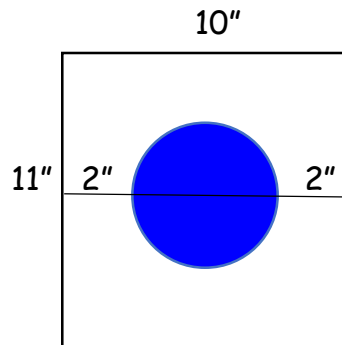
Name _____ Date _____

VOLUME 4 LESSON 13 SUPPLEMENTAL WORKSHEET

1. A brick wall is constructed using 6" x 12" blocks. Look at the picture below.
What is the area of this wall?   _____
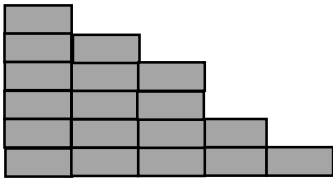
2. What is the area of the square below? Be sure to subtract the area of the
circle. _____   10"

11"   2"   2"

3.   A shed with four walls needs to be painted. Each wall measures 8' x 6'.
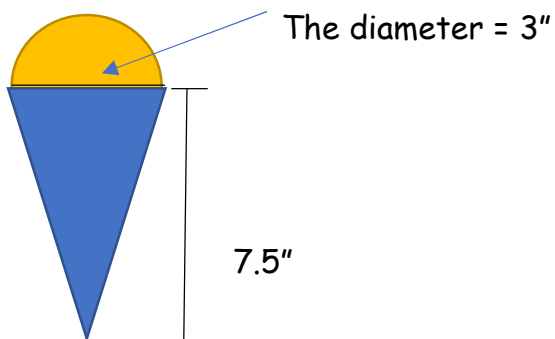How many square feet needs to be painted? _____

Volume 4 Lesson 13 Supplemental Worksheet page 2

You may round your answers down to two digits. The final digit in our answer may vary from yours, due to rounding.

4. Find the area of the circle below and then subtract the area of the triangle. How many square feet are left? _____
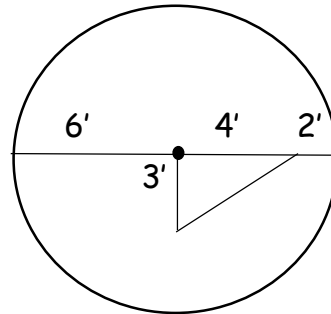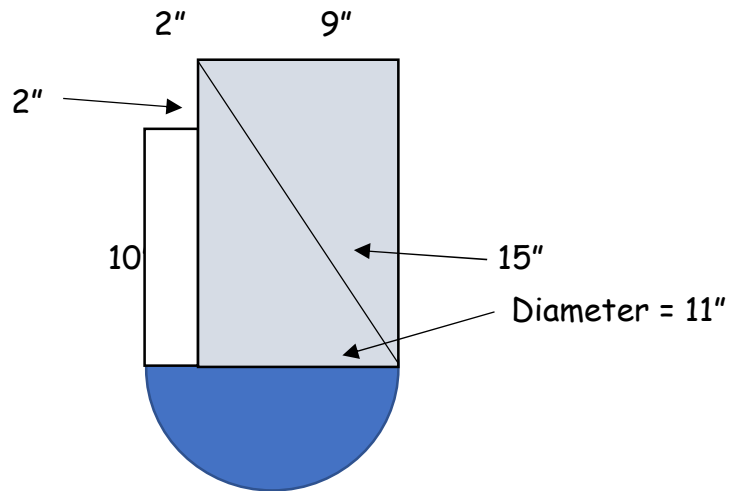

5. Find the area of the shape below. _____

The diameter = 3"

7.5"

6. Find the area of the odd shape below. _____

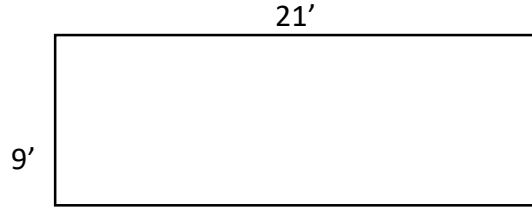2"   9"

2"

10

15"

Diameter = 11"

Name _____ Date _____

VOLUME 4 LESSON 14 SUPPLEMENTAL WORKSHEET

1. Look at the rectangular shape and then answer the following questions about it.
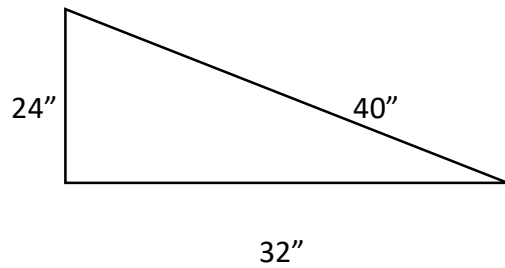
Perimeter = _____

Area = _____

21'

9'

2. Look at the triangular shape and then answer the following questions about it.
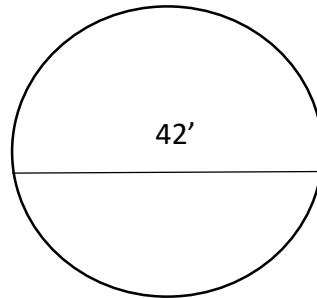
Perimeter = _____

Area = _____

24"   40"

32"

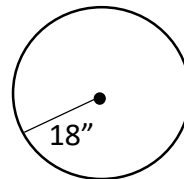3. Look at the circles and then answer the following questions about them.

Circumference = _____

Area = _____

42'

Circumference = _____

Area = _____

18"

Volume 4 Lesson 14 Supplemental Worksheet page 2

4. An outline of two pieces of property are drawn below. Which piece has the most square footage? _____

The owners want to put a fence all the way around each piece of property. Find the perimeter of each piece of property to determine how many feet of fence each owner will need.

Property A Perimeter = _____

Property B Perimeter = _____

Property A

110'

90'

Property B

60'

175'
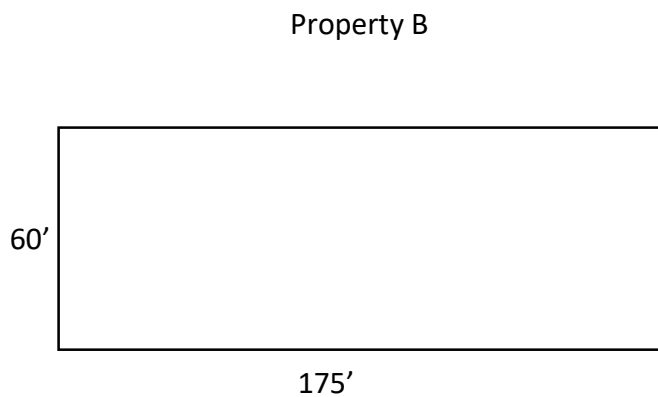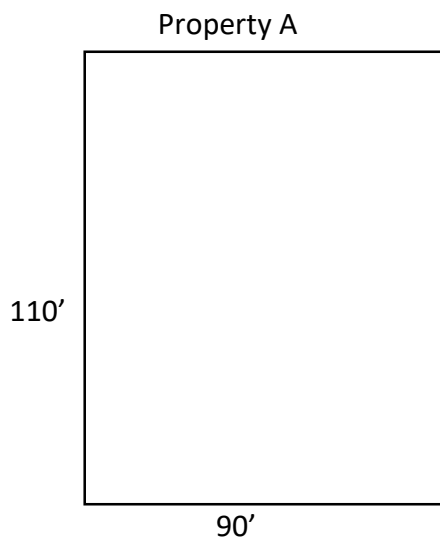
5. What is the perimeter of the star shape below? _____

8"   8"

8"   8"

8"   8"

8"   8"

8"   8"
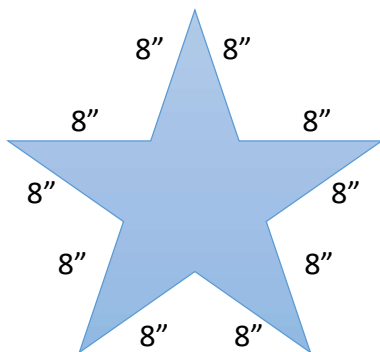
Name _____ Date _____

Volume 4 Lesson 15 Supplemental Worksheet

1. Find the area of a square that measures 5' x 14'. _____

2. Find the area of a circle with a 13' diameter. _____

3. Find the circumference of a circle with a 32' diameter. _____

4. Find the area of a triangle that has a 12" base and measures 24" high. _____

5. Find the volume of a 12" cube. _____

6. The Okto Carmonia Orchestra will be performing on a semi-circular stage (half circle) that measures 50' across. Conductor Carlos Lopez needs to make sure each musician will have 6' x 6' of space, and the conductor will need 8' x 8' of space. There are ten performers and one conductor. Is there enough space on the stage for the entire Orchestra? _____

Square feet of space on stage =   _____

Square feet needed for performers =   _____

Square feet needed for conductor =   _____

7. When you answer a question that asks you to solve for the area of a shape, your answer will always end with _____ because you multiplied _____ units together.

8. When you answer a question that asks you to solve for the volume, your answer will always end with _____ because you multiplied _____ units together.

9. Which object best represents a space figure, a ball or a street sign? _____

10. Which object best represents a plane figure, a box full of toy airplanes or a poster of an airplane? _____

11. A 9" x 11" x 3" glass dish is full of water. It is poured into a plastic container that measures 4" x 9" x 5". Will all the water fit in the plastic dish? _____

12. A customer needs to ship 181 cubic inches of sugar. Which of the three boxes below will hold that much sugar? _____

A. 8" x 6" x 3"   B. 10" x 3 ½" x 4"   C. 12" x 5.5" x 3.5"

13. You have two boxes on the table. The first box is 1 ½" tall, and the top measures 4" x 5 ½". The other box is 2" tall, and the bottom measures 3" x 6". Which box has the most volume? _____

14. One yard of dirt is equal to 27 cubic feet. The bed of your pickup truck measures 8' x 5' x 2'. Will one yard of dirt fit into the bed of your pickup truck? (The dirt must be level with or below the top of the bed). _____

Name _____ Date _____

Volume 4 Lesson 16 Supplemental Worksheet

Volume of a Sphere = $\frac{4}{3}\pi r^3$

Find the volume of the following spheres. Round your answers down to the nearest one-hundredth.

1. A Christmas ornament with a radius of 1.5 inches. _____

2. A geode with a diameter of 6 inches. _____

3. An exercise ball with a radius of 15 inches. _____

4. A moon with a diameter of 1,940 miles. _____

5. An asteroid with a radius of 11 feet. _____

6. A bead with a radius of ¼ inch. _____

7. Kelly is shipping an 8" basketball, signed by Nick Kauffman, to her son. Will it fit into a cube-shaped box with 1,728 cubic inches of space inside? _____