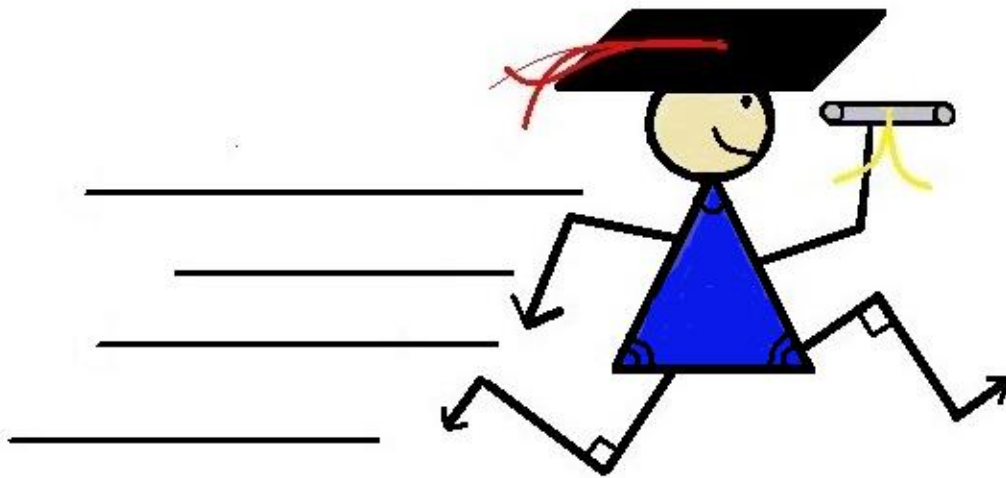# CHAPTER 1

Lines and Angles

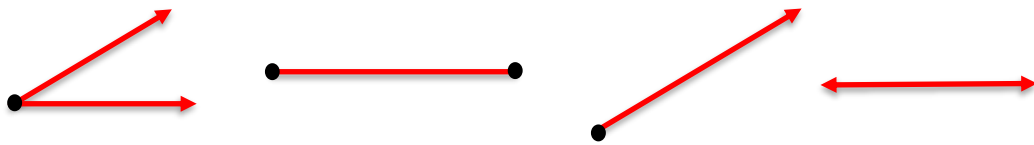# Learn Math Fast

Name: _____ Date: _____

<u>WORKSHEET 4-1</u>

1. Draw a line with two points creating a line segment AB.

2. Draw an angle and label the points as CDE with point D being the vertex.

3. Draw ray KL with K as the endpoint.

4. Name each picture as a line, a line segment, a ray, or an angle.
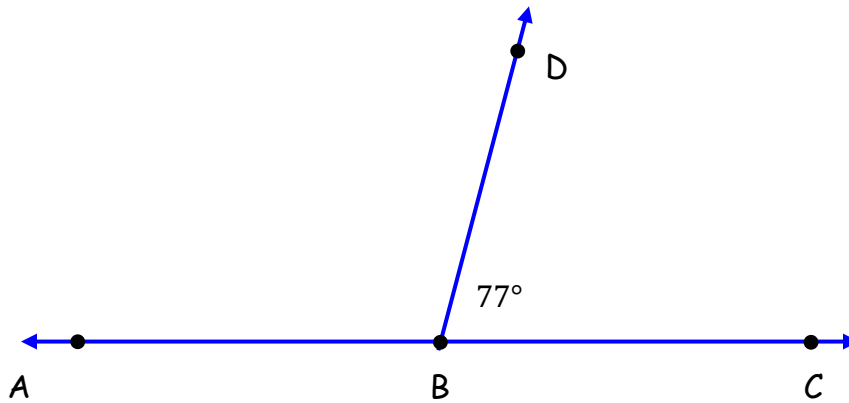
    A. _____ B. _____ C._____ D._____

5. Using the little symbols we just learned: ↔ , → , ‾ , and ∠, write the short name for each of the following.

    a. Line AB _____

    b. Line segment CD _____

    c. Ray BC _____

    d. Angle EFG _____

WORKSHEET 4-2

Look at the drawing below and then answer the questions.
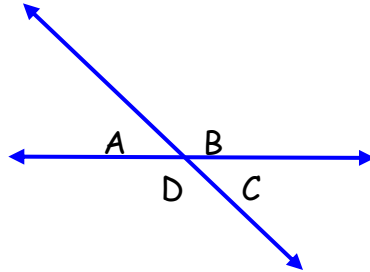

1. Is angle ABD obtuse or acute? _____

2. Is angle DBC obtuse or acute? _____

3. What is the measurement of angle ABD? _____

4. What is the measurement of angle DBC? _____

5. Look at angle ABD. Which letter is the vertex? _____

6. Name the angle that is adjacent to angle DBC. _____

Name: _____ Date:_____

CHAPTER 1 REVIEW TEST

All questions will be about this drawing:

1. Is angle B an obtuse angle or an acute angle? _____
2. Is angle C an obtuse angle or an acute angle? _____
3. If angle A is 50º, what size are angles B, C, and D? _____
   _____
4. Are angles A and D opposite or adjacent angles? _____
5. Are angles A and B opposite or adjacent angles? _____
6. If angle D is 129º, what size is angle B? _____
7. If angle D is 129º, what size is angle C? _____
8. Why are there arrows on the ends of the lines?
   _____
9. Draw a picture to portray each of the following geometric terms.

   A Line segment

   A Ray

   An angle with a vertex Q

   Any Angle

Chapter 1 Review Test (Continued)

Draw a picture to portray each of the following geometric terms.
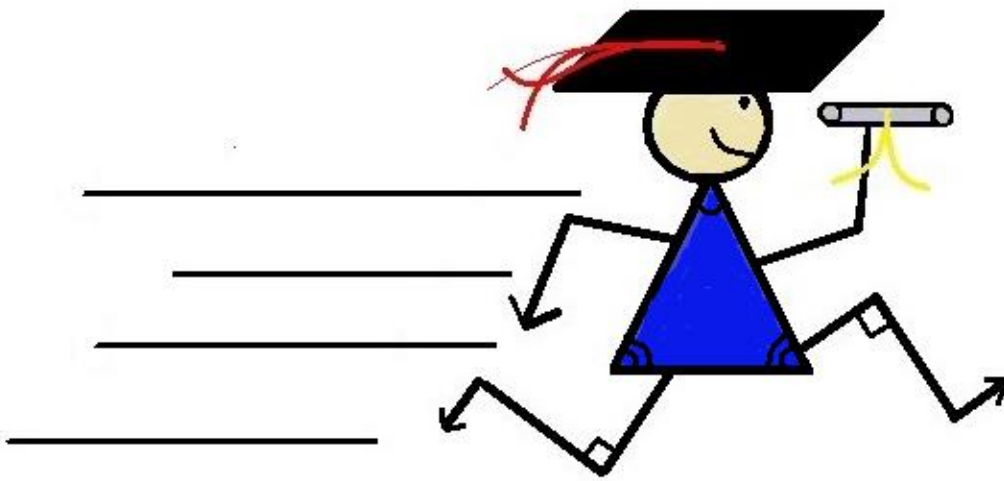
A Right angle

An Obtuse angle

An Acute angle

Two opposite angles

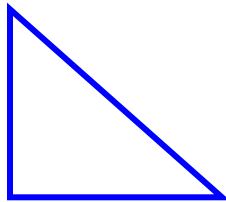Two adjacent angles

CHAPTER 2
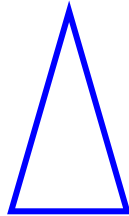
Triangles, Squares and Polygons

Learn Math Fast

WORKSHEET 4-4

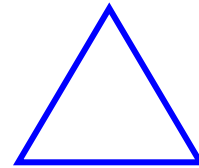1. Name each type of special triangle pictured below.

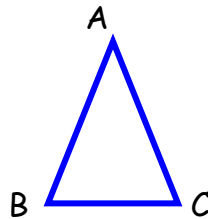A. _____   B. _____   C. _____

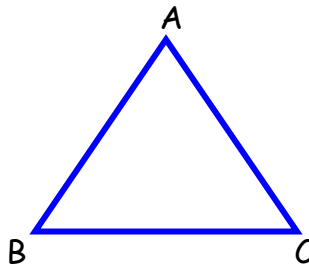2. Below is an isosceles triangle. Answer the following questions.

A

B _____ C

    A. Angle B is 70°. What is the measurement of angle A? _____
    B. Side AC is 7". What is the length of side AB? _____
    C. Angle A is 80°. What is the measurement of angle C?_____

3. Below is an equilateral triangle. Answer the following questions.

A

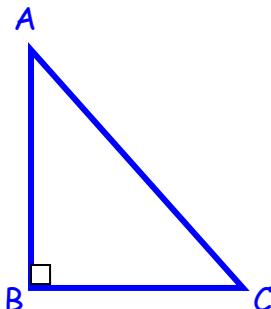B   C

    A. What is the measurement of angle B? _____
    B. Side AC is 10'. How long is side BC? _____
    C. What is the total measurement of angles A, B, and C together?
    _____

4. Below is a right triangle. Answer the following questions.

A

B

C

    A. What is the measurement of angle B? _____

    B. If angle C is 45°, what is the measurement of angle A? _____

    C. If angle A is 50°, what is the measurement of angle C? _____

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

6. I'm thinking of a triangle. Two of the angles are 60°. What kind of triangle is it? _____

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

8. I have a triangle. The measurements of the angles are 30°, 60°, and 90°. What type of triangle do I have? _____

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

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

_____

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

Name: _____   Date:_____

WORKSHEET 4-5

1.   Think of all the numbers between 1 and 20. Which number looks like two parallel lines? _____

2.   Which two letters of the alphabet look like perpendicular lines?_____

3.   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?

_____

4.   Which set of lines are parallel to each other? Circle the letter.

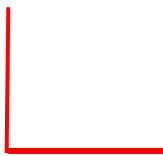A   B   C
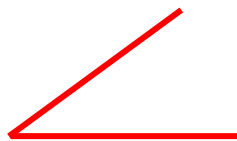
5.   Look at A, B, and C above in problem number 4. Which set of lines are perpendicular to each other? _____

6.   Of the three angles below, which one is most likely a 90-degree angle?

A   B   C

7.   Which shape is a square?
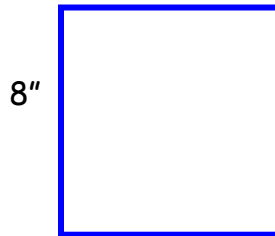

A   B   C
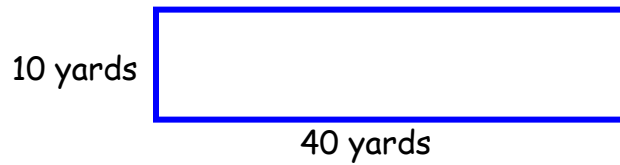
8.   How many dimensions does a plane figure have? _____

WORKSHEET 4-6

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

8"

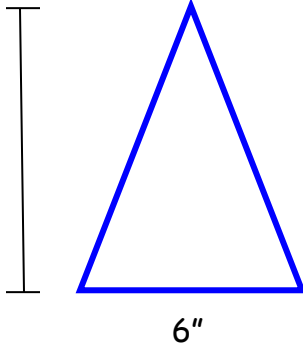2.   Find the area of this rectangle. _____

10 yards

40 yards

3.   Your back yard measures 30 feet x 40 feet. What is the area of the back yard? _____

4.   What is the area of a 9-foot-tall square? _____

5.   My Geometry book measures 11" x 8". How many square inches are on the front cover? _____

6.   I'm going to put tile on the floor. Each tile is one square foot. The floor measures 20' on one side and 24' on the other side. How many tiles will I need to cover the floor?
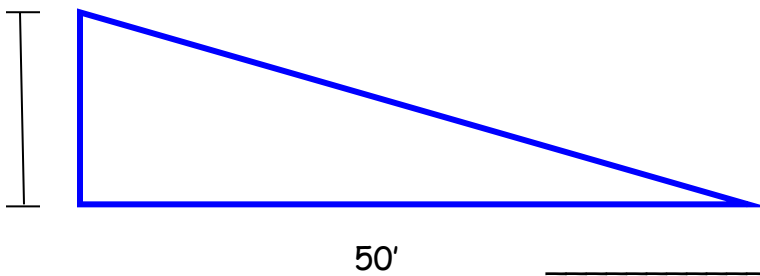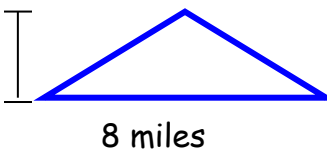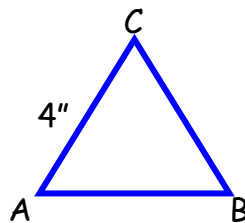
_____

Name: _____   Date:_____

WORKSHEET 4-7

Find the area of the following triangles using the formula $A = \frac{1}{2} bh$.

1.

10"

6"

_____

2.

9'

50'

_____

3.   3 miles

8 miles

_____

4.   Look at triangle ABC and then answer the questions on the next page.
       You won't need a protractor or a ruler. All you need to know is that it
       is an **equilateral** triangle and side AC = 4".

C

4"

A   B

a. What is the length of side BC? _____

b. What is the size of angle A?   _____

c. What is the length of side AB? _____

d. What is the size of angle C?   _____

5. Look at triangle DEF and answer the following questions. You won't need a protractor or a ruler. All you need to know is that it is a **right** triangle.
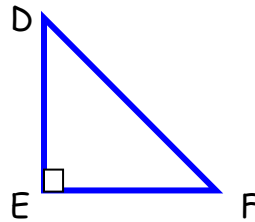
a. What size is angle E? _____

b. Angle D is 45°. What size is angle F? _____

c. What does the little box in angle E mean? _____

6. I'm going to paint a triangular shape on the wall. The triangle will be 8 feet tall. The base of the triangle will be 5 feet. How many square feet of wall will I be painting? _____

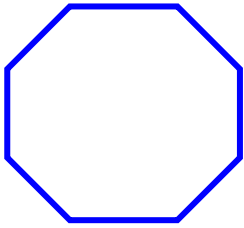7. If I fold any square in half diagonally, what two new shapes will I get?

_____

Check your answers and see how you did. If you got any of the answers wrong, go back and find what you missed. Once you understand everything on this worksheet, you are ready to move on.
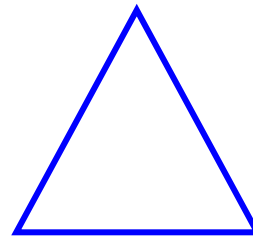
WORKSHEET 4-8

Name each polygon.

1. _____

2. _____

3. _____
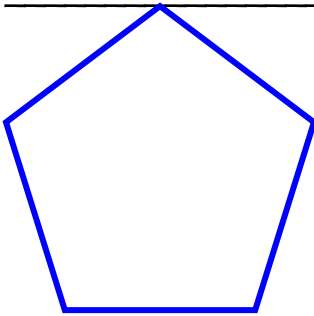
4. _____

5. _____

6. _____

7. _____
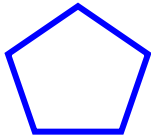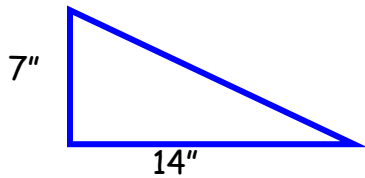
8. _____
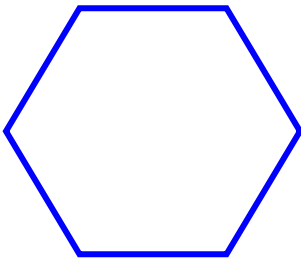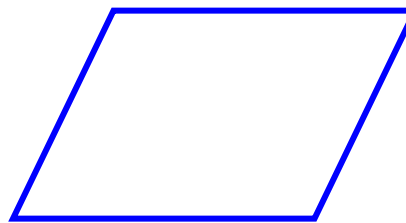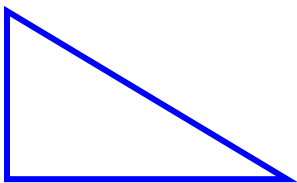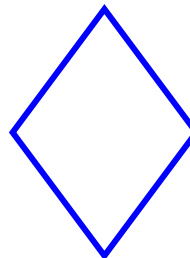
CHAPTER 2 REVIEW TEST

Name the following shapes:

1. _____   2. _____   3. _____
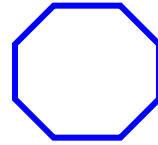
Find the area of the following shapes:

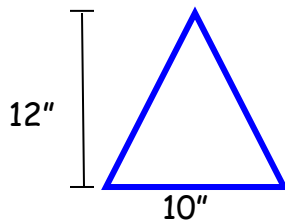4. _____   5. _____

7"

14"

6'

18'

6. _____   7. _____

12"

10"

11'

11'
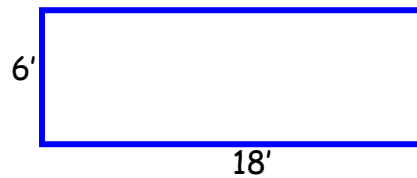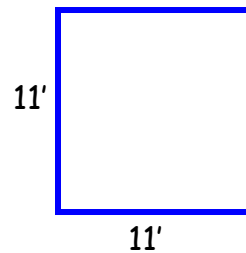
8.   Name the three special triangles. _____,
      _____, _____

9.   Which of the three special triangles has three 60º angles?
      _____

10.   Which of the three special triangles has at least two equal sides?
      _____

11.   Which of the three special triangles has a 90º angle. _____

12.   What is the total of all three angles in an isosceles triangle? _____

13.   Brianna drew a plane figure on a piece of paper. The figure has four
      angles with opposite sides being parallel. The top and bottom are both
      6" long. The two sides are both 8" long. What type of shape did
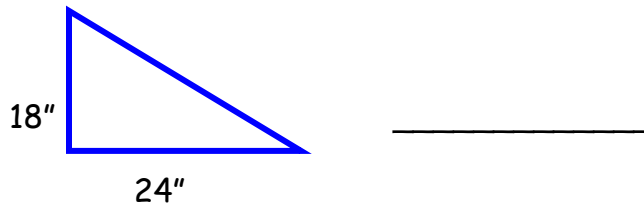   Brianna draw?   _____

CHAPTER 3

Pythagoras
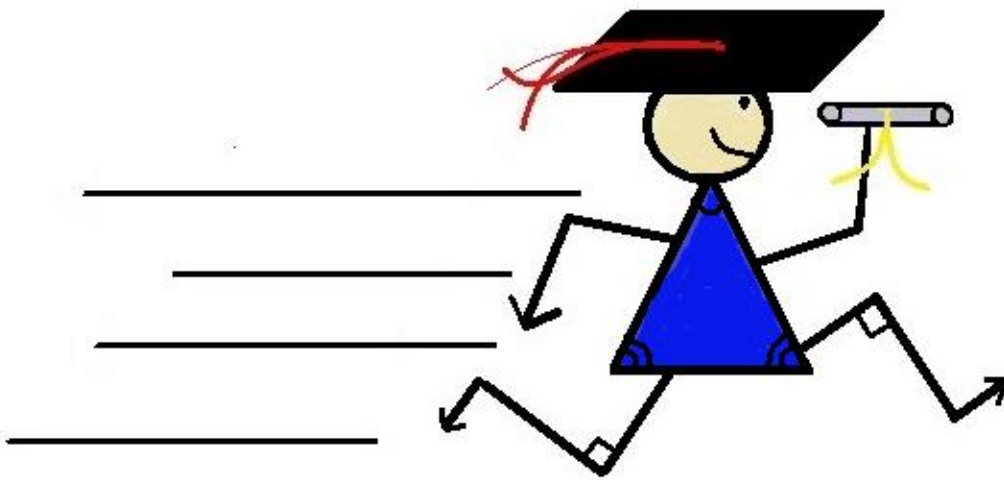
Learn Math Fast

Name: _____   Date:_____

WORKSHEET 4-9

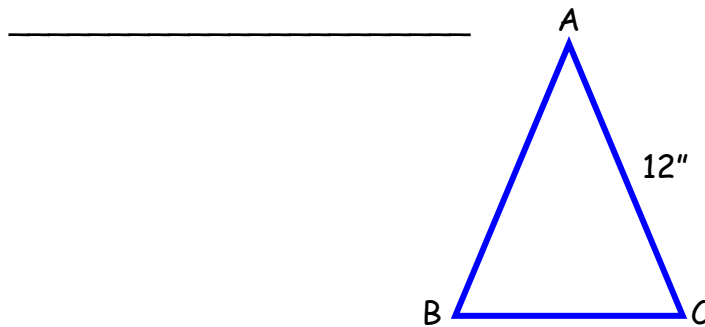1.   Use the Pythagorean Theorem to find the length of this hypotenuse.

18″

24″

_____

2.   What type of triangle has a hypotenuse? _____

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

_____   A

12″

B   C

4.   Find the length of the hypotenuse for triangles A, B, and C, below.

6″   A
   8″

_____

3″   B
        11″

_____

10′   C

   4′

_____
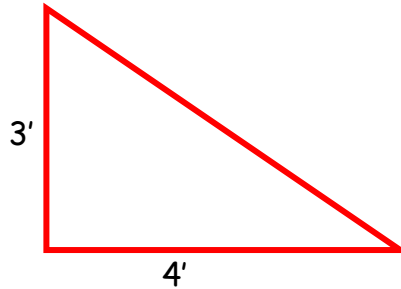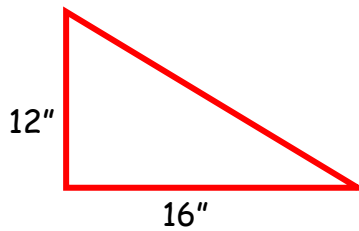
Name: _____   Date:_____
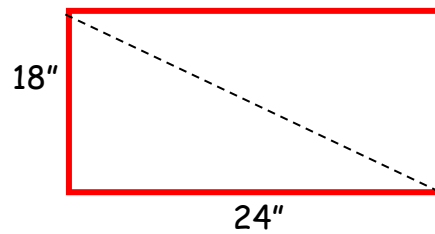
CHAPTER 3 REVIEW TEST

1. Find the length of the hypotenuse. _____

3'

4'

2. Find the length of the hypotenuse. _____
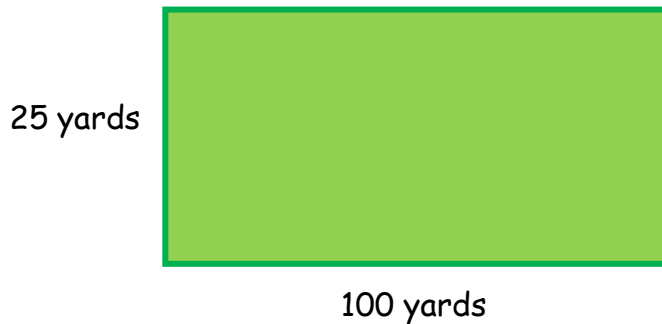

12"

16"

3. Find the diagonal length of this rectangle. _____

18"

24"

4.   You are told to draw chalk lines on the ground for a football game. The rectangle for the football game is 100 yards long by 25 yards wide. Find the diagonal of this rectangle in order to have a perfectly "square" rectangle. What is the diagonal measurement of the football field? _____

25 yards

100 yards

5. Write the Pythagorean Theorem. _____
6. What is the missing measurement? _____
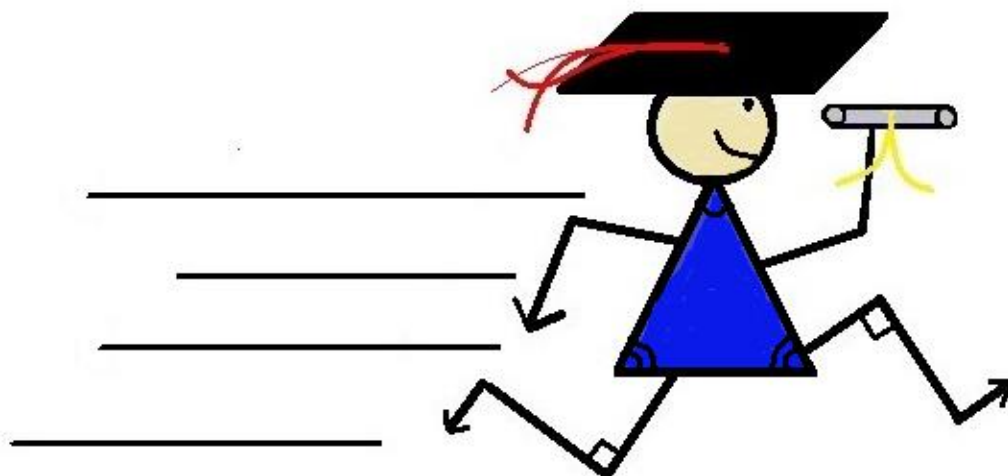
27"   45"

X
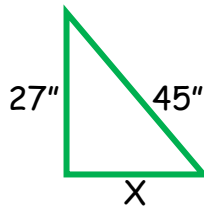
If you understand everything up to this point, you are ready to learn about circles. If you are confused by anything we've learned so far, please go back and read this section again until it is simple.
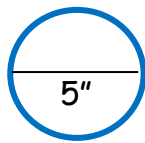
CHAPTER 4

Circles

Learn Math Fast

Name: _____   Date: _____
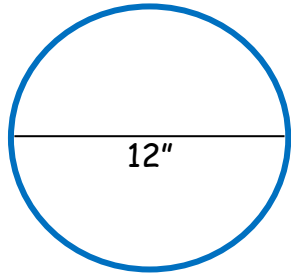
WORKSHEET 4-11

Use C = dπ (seedy pie) to find the circumference of each circle.
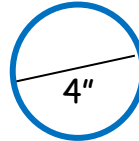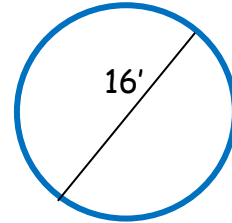

1.	2.	3.	4.
_____	_____	_____	_____

5.   Which Greek symbol do we use to represent 3.14 inches? _____

6.   Mick cut down a tree with a chainsaw. The stump measured 6.28 feet around. What was the diameter of the tree he cut down? _____

7.   Josh bought a round swimming pool. It measures 15' from one side to the other side. Josh wants to put a string of Christmas lights around the pool. How long should the string of lights be? _____

8.   Amanda drove over the bridge from point A to point B. It was a 1 mile drive across the bridge. The circle below represents a lake. How long would she have driven, if she had gone around the lake from point A to point B?

20
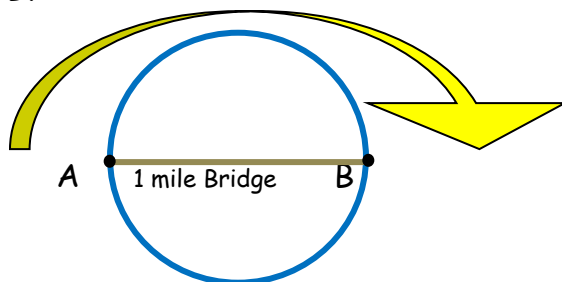
WORKSHEET 4-12

1.   Find the circumference of a circle with a diameter of 3". Remember to use "seedy pie". _____

3 inches

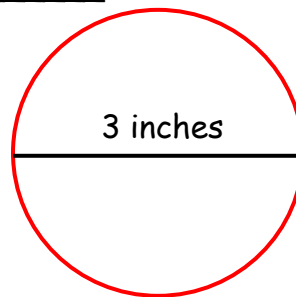2.   Find the area of a circle with a *diameter* of 8". Use "A pie are squared" to figure out the answer and be sure your answer has "inches squared" at the end. _____
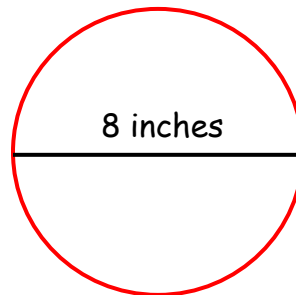
8 inches

3.   Answer this question immediately, don't do any math, just figure it out logically in your head. What is the circumference of a circle whose diameter is one inch? _____

4.   What is the radius of a circle that has a circumference of 3.14 inches? _____

Name: _____   Date: _____

WORKSHEET 4-13

1.   What is the area of this shape? _____
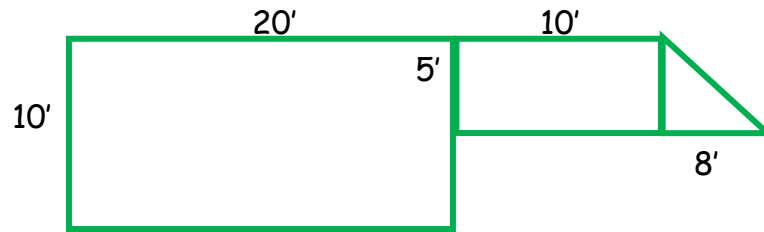
2.   What is the area of this shape? _____

3.   Find the area of the purple and white shape below. _____
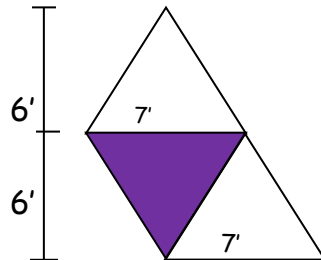
WORKSHEET 4-14

1. Find the **perimeter** of the following three shapes: a square, a right triangle and a rectangle.

    5"

    3'   12'

    4'   20'

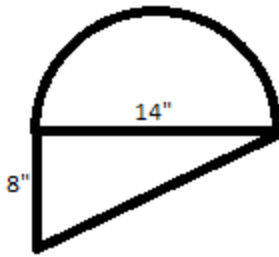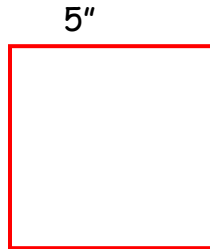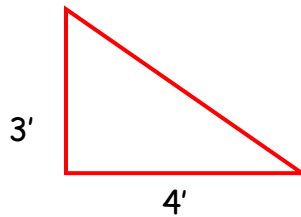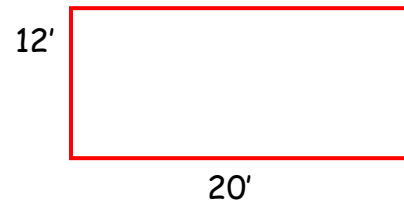   A. _____   B. _____   C. _____

2. Find the circumference of this circle. _____

    5"
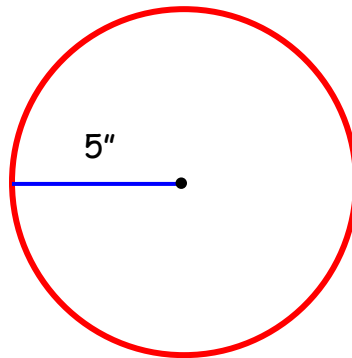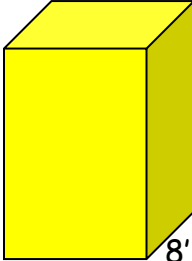
3. Find the perimeter of a square with 3/8" sides. _____
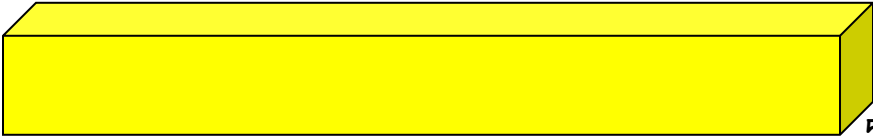
    If you fully understand the meaning of area, perimeter, and circumference, then you are ready to learn about volume. If you need more practice, look for more worksheets on our website, under the Existing Customers tab.

WORKSHEET 4-15

Find the volume of these shapes.

1.   12'   _____

     8'

     6'

2.   5"   _____

     25"   5"

3.   How much water can this fish tank hold? Your answer should be in
       cubic feet.

     2'

     4'   1'

     _____

Name: _____   Date:_____

<u>WORKSHEET 4-16</u>

Find the volume of the following spheres.

1.   A basketball with a radius of 7". _____

2.   A globe with a radius of 10".   _____

3.   A bouncy ball with a radius of ½ inch. _____

Find the volume of the following rectangular prisms.

4.   A box that has a base of 4", stands 5" tall, and has a width of 7".
        _____

5.   A treasure chest that is 3' wide, 2' tall, and 2' deep. _____

6.   A stick of butter that measures 1" tall, 2.25" long, and 1-1/8" wide.
        _____

7.   What is a space figure? _____

8.   What is the difference between a cube and a square?
        _____

9.   What is the difference between a circle and a sphere?
        _____

10.   What is the difference between a cube and a rectangular prism?
        _____

Name: _____   Date:_____

CHAPTER 4 REVIEW TEST

Find the **C**ircumference of the following circles.

1.   A circle with a diameter of 10 yards. _____

2.   A circle with a radius of 7 miles. _____

Find the **A**rea of the following circles.

3.   A circle with a radius of 3 feet. _____

4.   A circle with a diameter of 12 inches. _____

Find the area of the following shapes.

5.

15 feet

9 feet

12 feet   _____
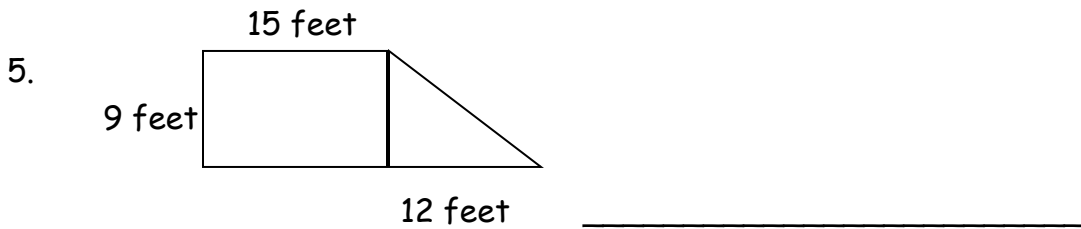
6.   Find the perimeter of the shape above. _____

Find the volume of the following space figures. $Vol.\,of\,sphere = \frac{4}{3}\pi r^3$

7._____   8. _____

6′

20′

5′

9′
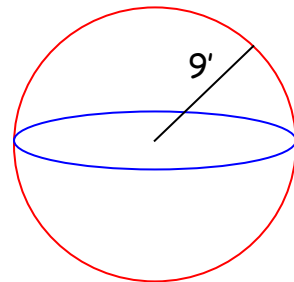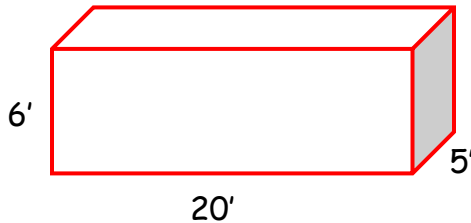
CHAPTER 4

The Metric System

Learn Math Fast

Name:_____   Date:_____

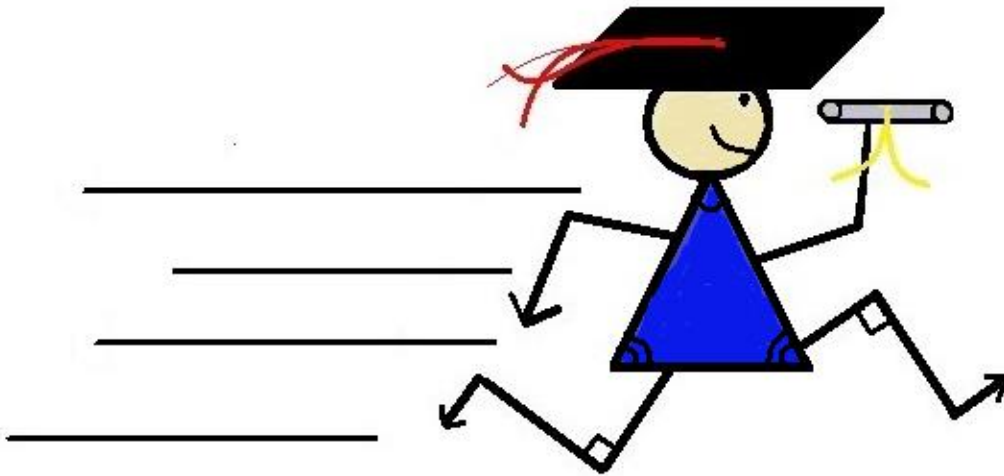# **WORKSHEET 4-17**

Fill in the blanks with the appropriate unit of measurement. Answer with meters, liters, or grams.

1. The golf ball traveled 200 _____.

2. The letter only weighs 20 _____, so one stamp is enough postage.

3. A bottle of water measures 1/2 _____.

4. How many _____ does a penny weigh?

5. How many _____ of gas did you put in your car?

6. It took me almost an hour to walk 3000 _____.

7. Read the back of the box. How many _____ of sugar are in this snack?

8. A bag of chips holds 340 _____ of chips.

9. The fish tank broke and spilt _____ and _____ of water on the floor.

10. Did you see Mick jump? He must have traveled at least three _____.

Once you feel confident that you know the difference between a meter, a liter, and a gram, you are ready to continue.

WORKSHEET 4-18

1.   One paper clip weighs about one gram. If I break that paper clip into 1000 equal pieces, each piece will weigh one _____.

2.   I bought one liter of pop. I gave 1000 people a few drops each. Each person received one _____ of pop.

3.   I'm trying to measure how thin my credit card is. It is hard to measure something so small, but I know if I stack up 1000 credit cards, it will stand one meter tall. What is the thickness of just one credit card? _____.

4.   Sarah weighed herself. She weighed over 200 _____.

5.   Jack filled up the swimming pool with over 3 _____ of water.

6.   The pharmacist said these pills have 100 _____ of vitamin C.

7.   I stacked up 10 dimes. The whole stack measured 10 _____ tall.

8.   The speed limit on the highway is 80 _____ per hour here.

9.   The 10-K race was 10 _____ long.

10.   The recipe calls for 5 _____ of oil.

11.   That bottle has 120 _____ of perfume in it.

12.   1 gram x 1000 = 1 _____,

13.   1 gram ÷ 1000 = 1 _____.

Name: _____ Date:_____

WORKSHEET 4-19

Use one of the words from the list below to complete these sentences.

Kilogram   = 1000 grams   Centigram   = 1/100 of a gram
Kilometer   = 1000 meters   Centimeter = 1/100 of a meter
Kiloliter   = 1000 liters   Centiliter = 1/100 of a liter

Milligram   = 1/1000 of a gram
Millimeter = 1/1000 of a meter
Milliliter = 1/1000 of a liter

1.   I got a splinter in my hand. It was about 1 _____ wide.

2.   I drove to the store. It was about 3 _____ away.

3.   That fish tank is huge. It must have nearly 100 _____ of
      water in it.

4.   My doctor said this pill has 500 _____ of aspirin in it.

5.   A small bird feather weighs approximately 7 _____.

6.   I went on a diet and I lost over 9 _____.

7.   I put 1 spoonful of water in the dough, that's about 1 _____.

8.   The diameter of a marble is about 1 _____.

9.   A bottle of eye drops holds 30 milliliters, that's the same as 3
      _____.

10.   I ran 5 _____ in 1 hour.

WORKSHEET 4-20

Write the abbreviation for each of the following metric units.

1. Meter _____

2. Centimeter _____

3. Liter _____

4. Centiliter _____

5. Kilogram _____

6. Gram _____

7. Milligram _____

8. Kilometer _____

9. Milliliter _____

10. Kiloliter _____

Name: _____   Date: _____

CHAPTER 5 REVIEW TEST

1.   How many centimeters are in a decimeter? _____

2.   How many decimeters are in one meter? _____

3.   How many millimeters are in a centimeter? _____

4.   How many centimeters are in a meter? _____

5.   What measurement is closest to the width of a pencil lead?
        1 mm   1 cm   1 dm   1 m

6.   What measurement is closest to the length of a new pencil?
        2 mm   2 cm   2 dm   2 m

7.   What measurement is closest to the height of a door?
        2 mm   2 cm   2 dm   2 m

8.   What measurement is most likely the size of a chocolate chip cookie?
        7 mm   7 cm   7 dm   7 m

9.   What does the prefix Kilo mean?

10.   What does the prefix Milli mean?

11.   Which is most likely one mL?
        A glass of milk   Volume of a fish tank   3 rain drops

12.   Which is heavier?
        3 grams   9 centigrams   1 kilogram

13. In the United States, we use feet for our base unit to measure length. What is the base unit used in the Metric System to measure length? _____

14. Your protractor has a one-decimeter ruler on it. How many millimeters are in one decimeter?

   _____

15. Write the abbreviations for the following metric units.

   Kilometer _____
   Liter   _____
   Hectometer _____
   Dekagram _____
   Meter _____
   Deciliter _____
   Centimeter _____
   Milligram _____
   Gram _____
   Milliliter _____

If you have completed this book and you feel you are ready to take the final test, then you may begin. If you feel confused, even a little bit, you should go back and read this book again. It won't take long to read it a second time.

FINAL GEOMETRY TEST

1. What is the name of the geometric drawing below? _____

2. What is the short name for this geometric drawing? _____
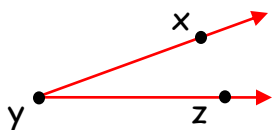
Look at the drawing below and then answer the following questions.
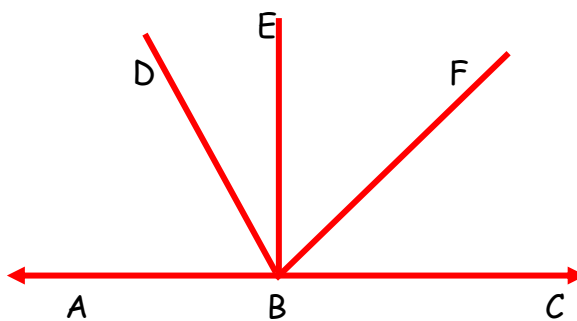
3. ∠EBC is a right angle. What is the measurement of angle EBA? _____

4. Is angle DBC obtuse or acute? _____

5. Is angle FBC obtuse or acute? _____

6. Angle EBC is a right angle. If angle EBD is 25º, then what is the measurement of angle ABD? _____

7. What angle is adjacent to ABD? _____

8. If angle FBC is 45º what is the measurement of angle ABF? _____

9. What angle is adjacent to angle FBC? _____

10. If angle ABD is 70º what is the measurement of angle DBE? _____

Look at the picture below and then answer the following questions.
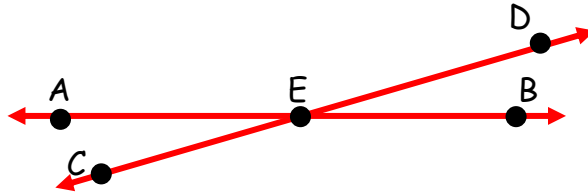
11. What angle is opposite angle AEC? _____

12. What is the vertex of angle DEB? _____

13. What angle is opposite angle CEB? _____

14. Name an angle that is adjacent to angle AED. _____

15. If∠ AEC = 15º, what is the measurement of∠DEB? _____

16. If∠ AEC = 15º, what is the measurement of∠CEB? _____

Name each type of special triangle.

17.   18.   19.

_____   _____   _____
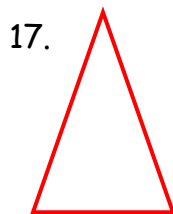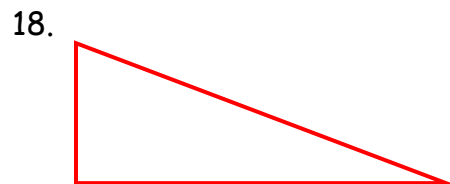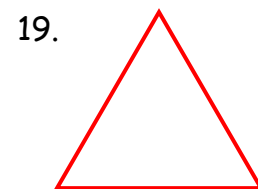
20. Look at triangle ABC below. If $\angle C$ = 30°, what is the measurement of angle A? _____
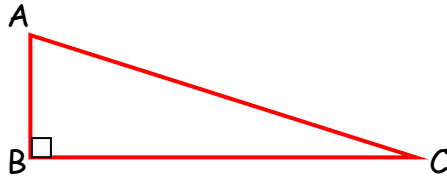
21.   Look at triangle ABC below. It is an Isosceles triangle. If angle A = 40°, what are the measurements of angles B and C? _____ _____
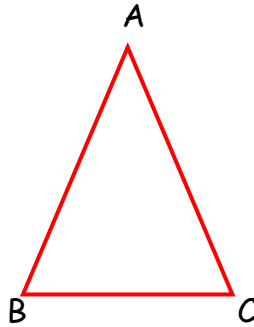
22. Look at triangle ABC below. What is the measurement of angle A?

_____
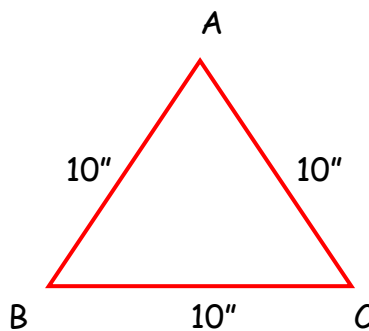
23. Find the area of this triangle. _____

5″

6″
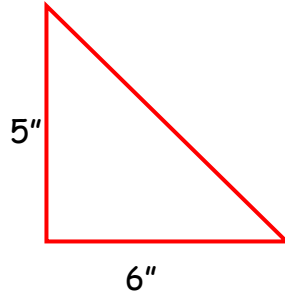
24. Find the area of the rectangle. _____

12′
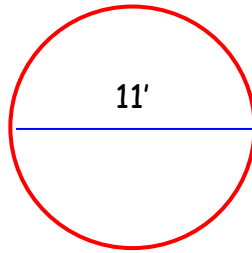
72′
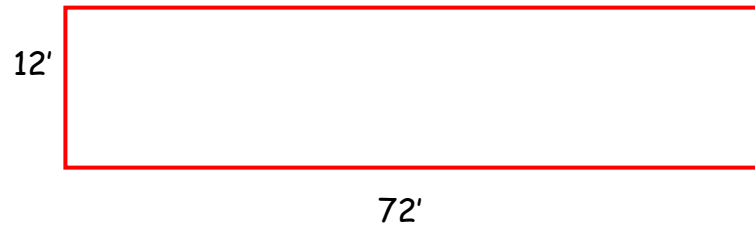
25. Find the area AND the circumference of this circle.
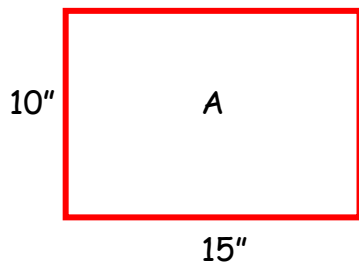
Area = _____,   Circumference = _____.

7″
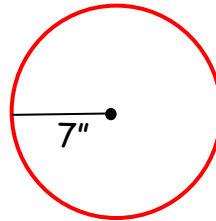
26. Find the area AND the circumference of this circle. _____

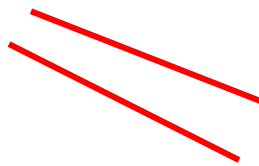   _____

11'

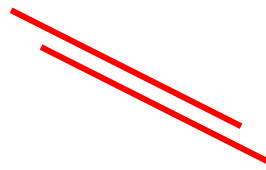27. Find the perimeter of the shapes below. A = _____, B = _____

10"   A   15"

6'   B   8'
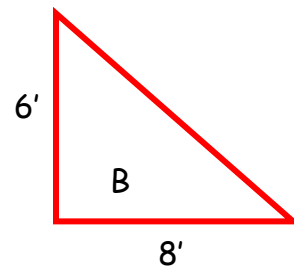
28. Which set of lines are parallel to each other? _____
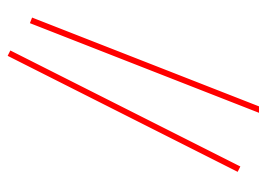
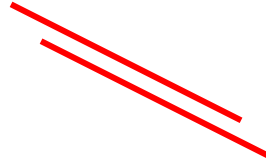A.   B.   C.

29. Which set of lines are perpendicular to each other? _____

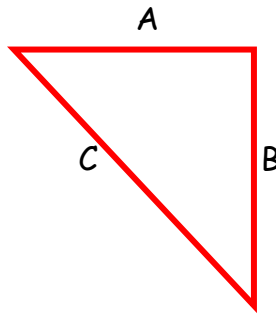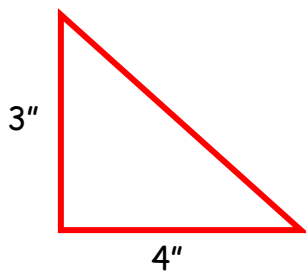A.   B.   C.

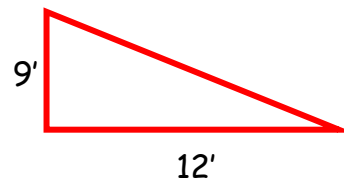30. Which side of this triangle is the hypotenuse, A, B, or C? _____.

A

C   B

Use the Pythagorean Theorem to find the length of the hypotenuse for the following two triangles.
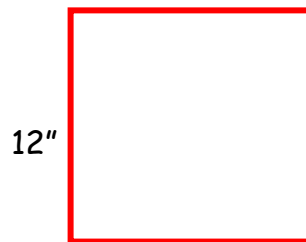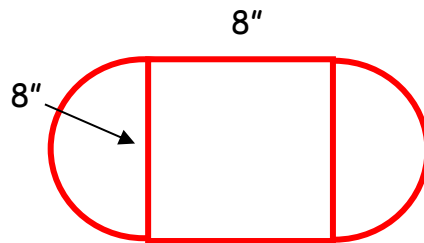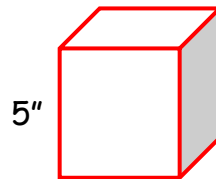
31. _____   32. _____

3"

4"

9'

12'

33. What is the diagonal length of this square? Your answer will be the square root of something. _____
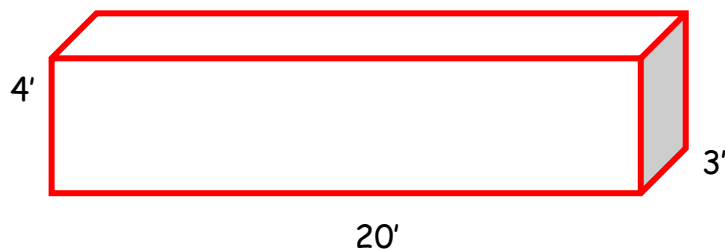
12"

34. Find the area of this oddball shape. _____
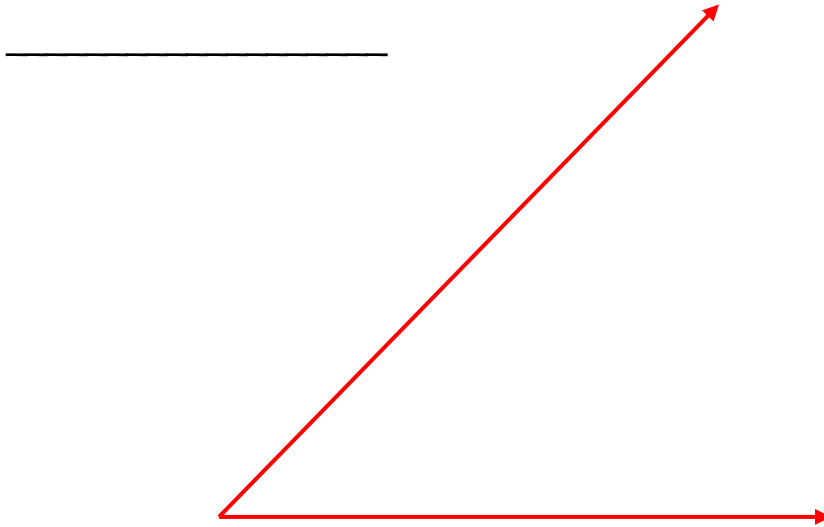
8"

8"

35. Find the volume of the cube below. _____

5"

36. Find the volume of the rectangular prism below. _____

4'

3'

20'

37. Use your protractor to find the measurement of the following angles.

   _____
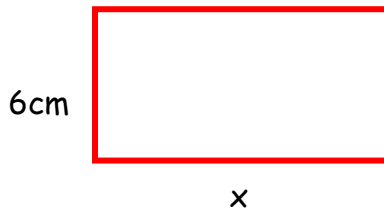

38. Who discovered that in a right triangle $a^2 + b^2 = c^2$? _____

39. Find the volume of a sphere with a radius of 7". Use V = $\frac{4}{3} \pi r^3$.

   You can round your answer down to the nearest hundredth. _____

40. What is another name for 1000m in the Metric System?_____

41. How many milliliters are in one liter?_____

42. The shape below has an area of 54cm². What is the length of base x?

   6cm

   x

43.   How many dimensions are on a plane figure? _____

44.   How many dimensions are on a space figure? _____

45. Which metric unit of measurement is closest to the US Standard inch? _____

46. Which metric unit of measurement is closest to the US Standard teaspoon? _____

47. Which metric unit of measurement is closest to the US Standard yard? _____

48. Write the Pythagorean Theorem. _____

49. Which side of the triangle below is the hypotenuse? _____
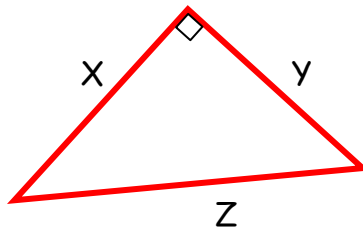
50. What is the name of a 3-sided polygon? _____
51. What is the name of a 5-sided polygon? _____
52. Give three names for a 4-sided polygon. _____, _____, _____
53. How many sides does an octagon have? _____
54. How many sides does a hexagon have? _____
55. Is a circle a polygon? _____

56. What formula has the nickname Seedy Pie? What do you use this formula for? _____ _____

57. What formula has the nickname A Pie Are Squared? What do you use this formula for? _____ _____