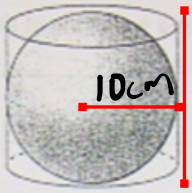
5. Nick's Sporting Goods sells basketballs in cylindrical boxes. Each ball is tightly packed into each box.



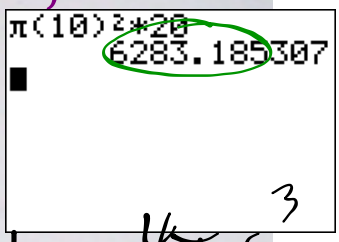
How much space inside the cylindrical box is taken up by the sphere?

a) $\frac{1}{3}$ b) $\frac{1}{2}$

c) $\frac{2}{3}$ d) $\frac{3}{4}$

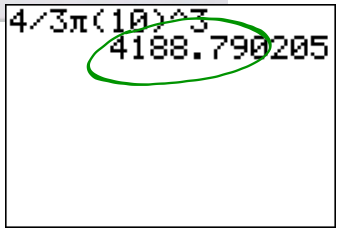
Part B: Short Answer

$SA_{cylinder} = \pi r^2 h$



$SA_{sphere} = \frac{4}{3}\pi r^3$

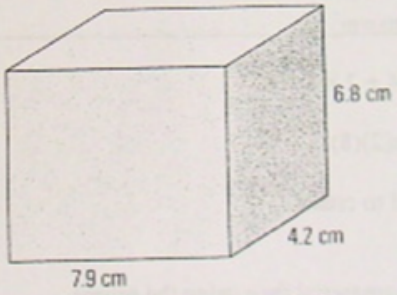
$= \frac{4}{3}\pi(10)^3$



4188.8

6283.2

12. Darrin is a candle maker. For his next candle, he buys a rectangular brick of wax, as shown below, and melts it. He shapes the melted wax into a spherical candle.



What is the approximate radius of the largest candle Darrin can make?

$V_{prism} = 7.9(4.2)(6.8)$

$= 225.624 cm^3$

$V_{sphere} = \frac{4}{3}\pi r^3$

$\frac{3}{4}\frac{225.624}{\pi} = \frac{4}{3}\pi r^3$

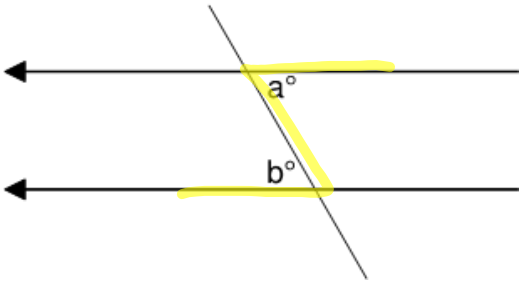
$\left(\frac{3(225.624)}{4\pi}\right)^{1/3} = \left(r^3\right)^{1/3}$

$= r$

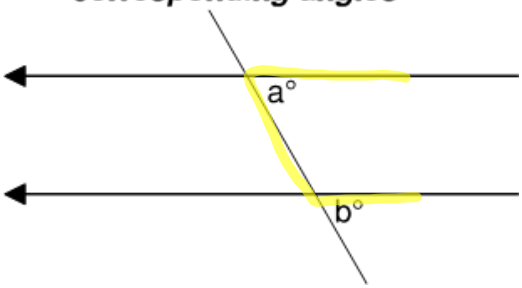
```
((3*225.624)/(4π
))^(1/3)
      3.776581793
3*225.64/4/π
      53.86758204
Ans^(1/3)
      3.776671062
```

Chapter 7 - Angles and Parallel Lines

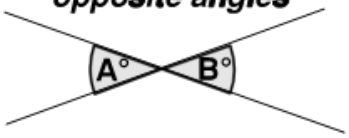
alternate angles



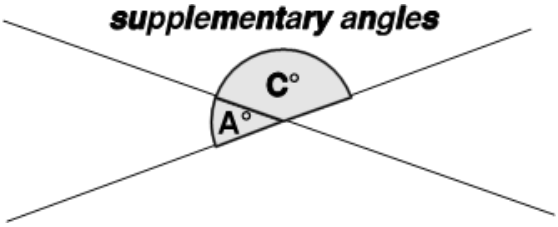
corresponding angles



opposite angles



supplementary angles



Let's talk angles...

Take a moment to look at the structures in your classroom that contain **angles**. Consider who would have been involved in creating the structures that have those angles, for example, architects, designers, surveyors, and carpenters. Angles are also useful to people who do not make structures. Aircraft pilots and boat pilots use angles for navigation. Astronomers use angles to locate objects in the sky.

So, what exactly is an angle? An angle is formed when two rays meet at a common endpoint called a vertex. Angles are measured with tools, such as a protractor, that are marked in degrees.

Visualize an angle that is used to express direction in navigation and mapping, such as east. In this case, the angle is measured relative to true north, which is 0° and may be expressed as a bearing. A **true bearing** describes the number of degrees, measured clockwise, between an imaginary line pointing towards true north (geographic north) and another imaginary line pointing towards an intended direction or along a pathway. East is represented in land navigation and mapping at a 90° angle from true north.

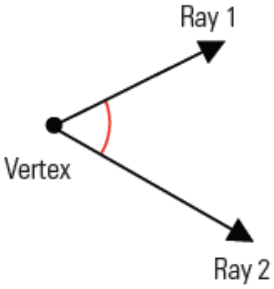
Angle measures can be estimated by using **referents**, which are common measurements like 90°, 45°, 30°, and 22.5°.

How can we draw angles? The tools used to measure angles can also be used to draw or replicate angles having specific measures. Tools have been designed to measure and create angles having only one or two specific measures, such as a set square used in technical drawings to draw right angles.

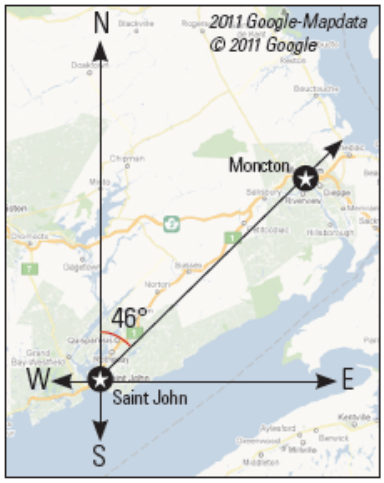
You have used a protractor and ruler to draw angles. You can also draw certain angles with a ruler and compass, and you can replicate any angle with these tools.

Key Terms...

angle: two rays that meet at a point called the vertex



true bearing: the angle measured clockwise between true north and an intended path or direction, expressed in degrees



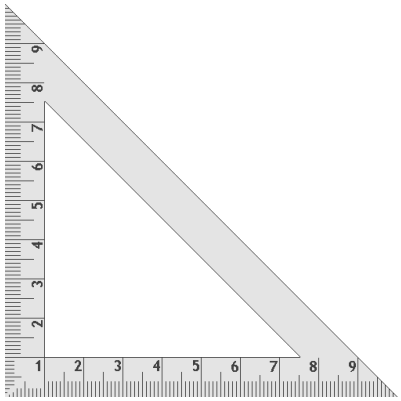
angle measure: a number representing the spread of the two rays of an angle, expressed in degrees

angle referent: a common standard of angle measure, for example, 0°, 45°, 90°, 180°, and 360°; they are used to estimate angles

Geometry Set... Bring MONDAY!

Protractor

Right Triangle



Compass

Ruler

Some More Key Terms...

Acute angle - measure is between 0° and 90°

Right angle - measure is 90°; the two rays are perpendicular to each other

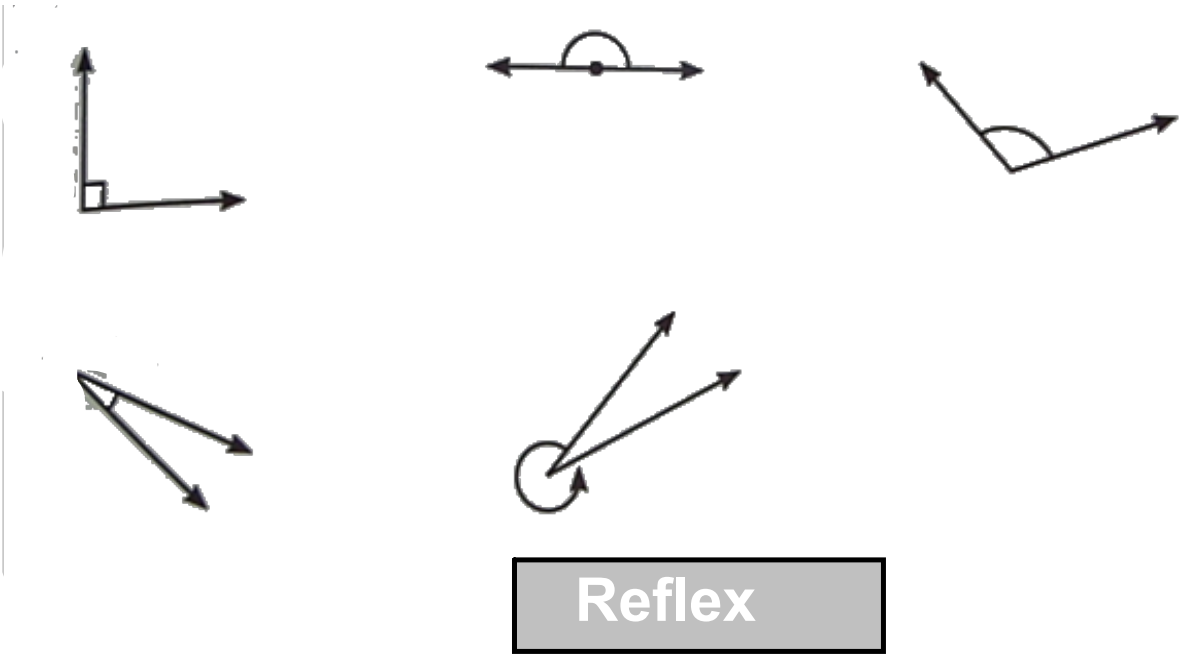
Obtuse angle - measure is between 90° and 180°

Straight angle - measure is 180°

Reflex angle - measure is between 180° and 360°

FIVE TYPES OF ANGLES	
Definition of angle	*Kind of angle*
greater than 0° but less than 90°	acute
90°	right
greater than 90° but less than 180°	obtuse
180° (two rays share a vertex and point in opposite directions)	straight
greater than 180° but less than 360°	reflex

EXERCISE: Identify each of the following angles using the correct terminology...



Reflex

More Key Terms...

complementary angles: two or more angles that have measures that add up to 90°

supplementary angles: two or more angles that have measures that add up to 180°

Sort the following angles into pairs of **complementary** and **supplementary** angles.