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1.1 Chapter 1 - An Introduction to Geometry

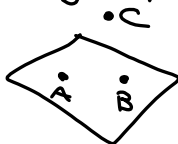
line segment 

line 

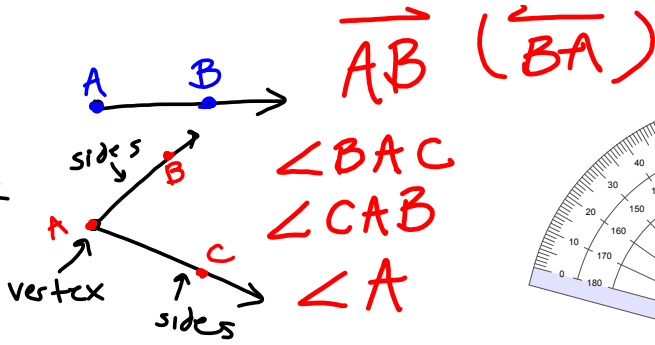
2 points determine a line  
 ⇒ any 2 points in space are collinear

plane - flat surface extending infinitely  


3 points define a plane  
 ⇒ any 3 points in space are coplanar

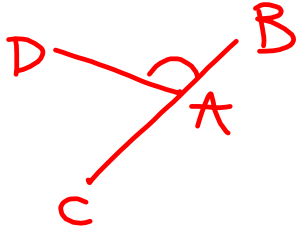
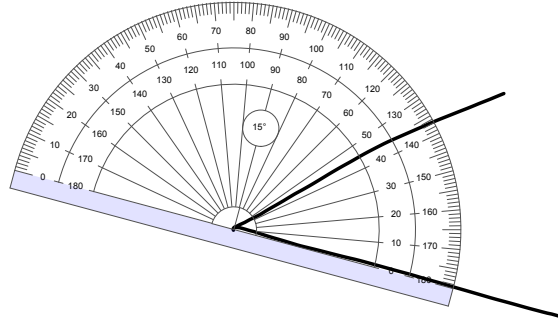


1.2  
ray  
angle



$\overrightarrow{AB}$  ( $\overleftarrow{BA}$ )

$\angle BAC$   
 $\angle CAB$   
 $\angle A$



1.3

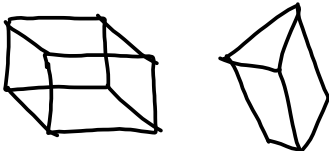
point is

- 0-dimensional

— line / line segment  
1-dimensional

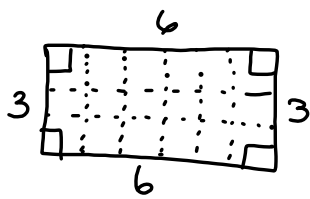


polygons are  
2-dimensional



polyhedron/polyhedra  
3-dimensional

perimeter, area, & volume



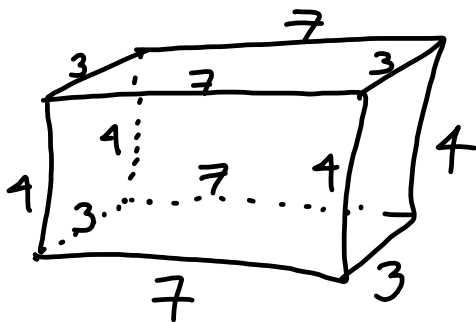
$$\text{perimeter} = 6 + 3 + 6 + 3 = 18$$

$$\text{area} = 6(3) = 18$$



$$\text{perimeter} = 10$$

$$\text{area} = 4$$



Volume =  
product of 3 linear  
dimensions

$$7(3)(4) = 21(4) = 84 \text{ units}^2$$

Surface Area =  
sum of areas of  
surfaces

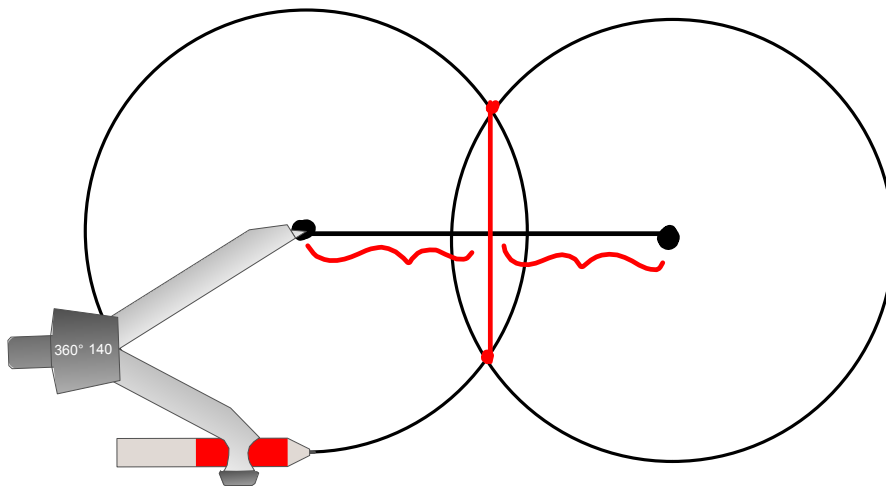
$$2(7)(3) + 2(7)(4) + 2(3)(4) = 42 + 56 + 24 = 122 \text{ units}^3$$

# 1.4 Compass constructions

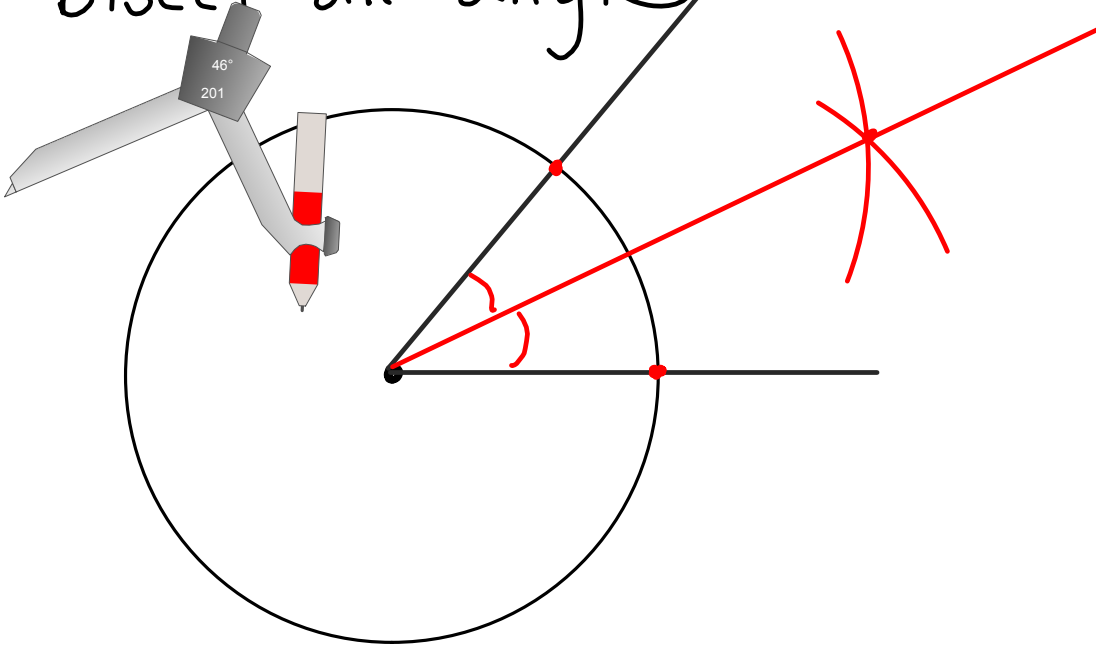
compass — draw circles & arcs

straightedge — ruler w/o ability to  
measure distance  
— draw lines through points

bisect a line segment



bisect an angle



**2.1 – Conditional Statements**

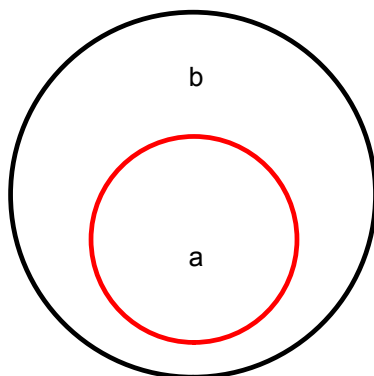
Conditional Statement: “If a, then b.” or “a implies b.”

a = hypothesis

b = conclusion

$$a \rightarrow b$$

Euler diagram



2.1 #7-11

“If it is snowing, then it is cold outside.”

“If it is cold outside, then it is snowing.”

7. Do both statements have the same hypothesis? *no*

8. Are they both true? Why or why not?

*1st true; 2nd not*

9. Do they mean the same thing? *no*

10. Rewrite the first statement so that the conclusion is stated before the hypothesis.

*It is cold outside if it is snowing.*

11. Is the statement that you wrote true?

*yes*