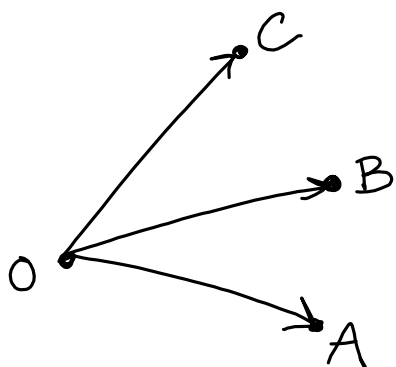


- Ch 5 Review Problems pp. 206-209 #15-50 due FRIDAY 01/06
- TEST #2 - Monday 01/09??

- Ch 6 Review Problems pp. 250-254 #9-19, 33-53



$$\underline{a < b < c} \text{ or } \underline{a > b > c}$$

$$\angle AOC = \angle AOB + \angle BOC$$

SAT Problem:

If x is an integer and $2 < x < 7$, how many different triangles are there with sides of lengths 2, 7, and x ?

15. Could $x=3$? Why or why not?

No. If $x=3$, then $2+x=2+3=5 < 7$
so the Triangle Inequality fails

16. What do you think is the answer to the problem? Explain.

$x=6$ works

$x \neq 7$ because $7 \nless 7$

only 1 triangle
2, 6, 7

Heron's Proof of the Triangle Inequality

Given: ABC is a triangle.

Prove: $AB+BC > AC$

Proof:

Statements	Reasons
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24. Let BD bisect	ABC
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25. $1 = 2$	
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26. $3 > 2$ and	$4 > 1$
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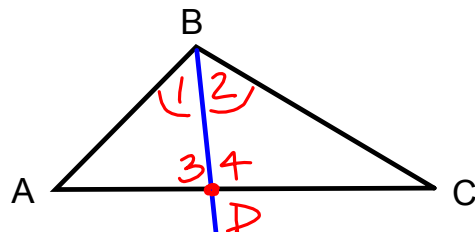
27. $3 > 1$ and	$4 > 2$
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28. $AB > AD$ and	$BC > DC$
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29. $AB+BC > AD+DC$	
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30. $AD+DC = AC$	
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31. $AB+BC > AC$	
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uniqueness of angle bisector & protractor postulate

def. of angle bisector - it divides an angle into 2 equal angles

An exterior angle is larger than either remote interior angle

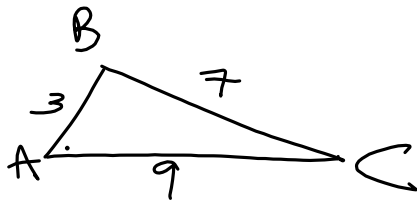
Substitution (#25 into 26)

If 2 \angle 's in a Δ are unequal, the sides opposite them are unequal in same order

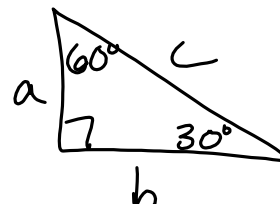
Addition Theorem of Inequality

Betweenness of Points Theorem

Substitution #30 into 29



Since $7 > 3$
 $\angle A > \angle C$



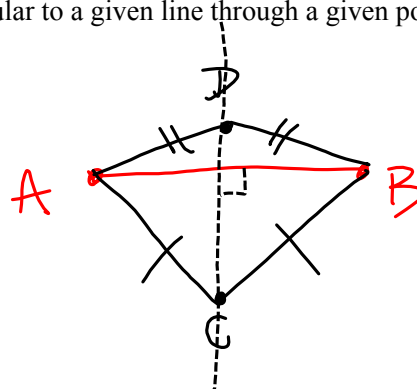
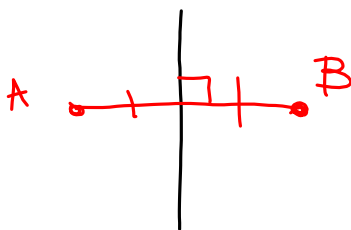
Since $30^\circ < 60^\circ$
 $a < b$

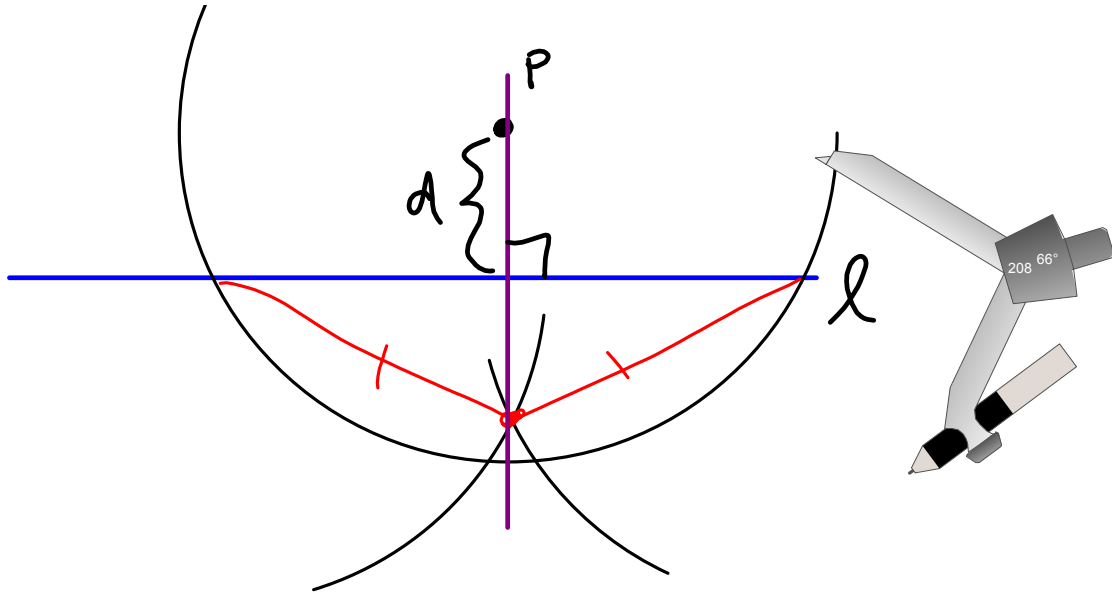
6.1 – Line Symmetry

Def: Two points are symmetric with respect to a line iff the line is the perpendicular bisector of the line segment connecting the two points.

Theorem 16: In a plane, two points each equidistant from the endpoints of a line segment determine the perpendicular bisector of the line segment.

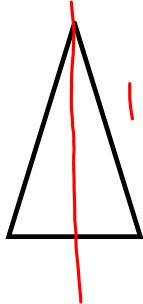
Construction 6: To construct a line perpendicular to a given line through a given point.



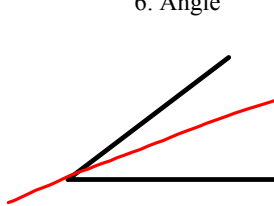


Sketch the lines of symmetry.

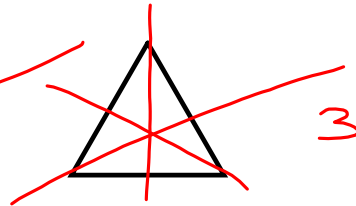
5. Isosceles triangle



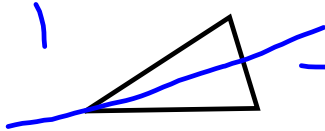
6. Angle



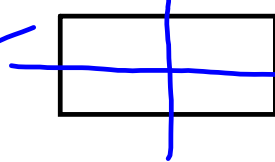
7. Equilateral triangle



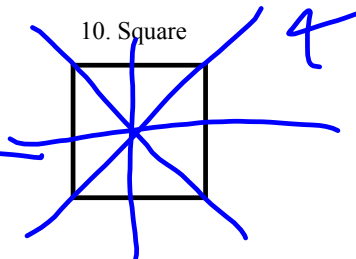
8. Isosceles triangle



9. Rectangle



10. Square



Points S and T are symmetric with respect to line l . What can you conclude about line l ?

Give a reason for each of the following statements.

22. $SM=MT$

l is perpendicular bisector of ST

23. $\angle BMS$ and $\angle BMT$ are right angles

perpendicular lines form right angles

24. $\angle BMS = \angle BMT$

all right \angle 's are equal

25. $MB=MB$

reflexive property of equality

26. $\triangle BMS \cong \triangle BMT$

SAS congruence

27. $BS=BT$

Corresponding parts of congruent triangles are equal

