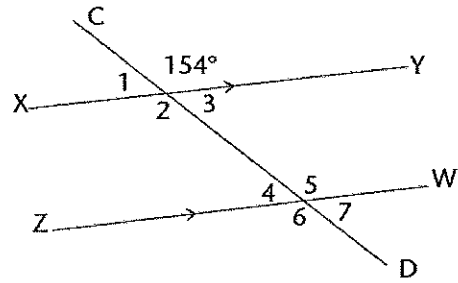
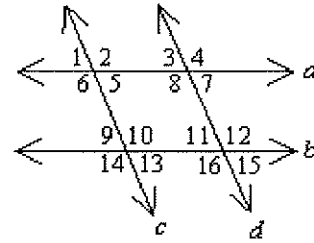


Geometry Review for Learning Check 2
SHOW ALL WORK FOR CREDIT!

- Find the measure of each angle in the diagram to the right and explain how you found our answer:
 - Angle 5 154° corresponding
 - Angle 7 26° same side ext.
 - Angle 6 154° alt. ext.
 - Angle 4 26° vertical to 7



- Name a pair of each of the following angles in the diagram.
 - Alternate interior $5+9$
 - Same side interior $5+10$
 - Corresponding $5+13$
 - Vertical $5+1$
 - ~~Same side interior~~ alternate ext. $1+13$
 - Same side exterior $1+14$



Answers will vary

- Name the property of equality that justifies each statement below.
 - If $m = n$ then $n = m$. symmetric
 - $a = a$ reflexive
 - If $a = k$ and $k = p$, then $a = p$. transitive

- For the given conditional write each of the related statements below.

Conditional: If it is Friday, then I will wear jeans.

Converse: If I will wear jeans, then it is Friday

Inverse: If it is not Friday, then I will not wear jeans

Contrapositive: If I will not wear jeans, then it is not Friday

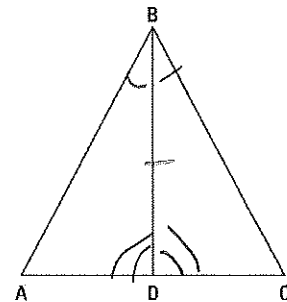
- Given:

$$\angle ABD \cong \angle CBD$$

$$\angle ADB \cong \angle CDB$$

Prove: $\triangle ADB \cong \triangle CDB$

Statements	Reasons
1) $\angle ABD \cong \angle CBD$	1) given
2) $\angle ADB \cong \angle CDB$	2) reflexive
3) $\triangle ADB \cong \triangle CDB$	3) ASA



- Write the equation of a line parallel to $y = 3x - 4$ through the point $(2, 1)$.

$$m = 3$$

$$y = mx + b$$

$$1 = 3(2) + b$$

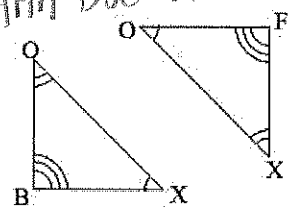
$$1 = 6 + b$$

$$-5 = b$$

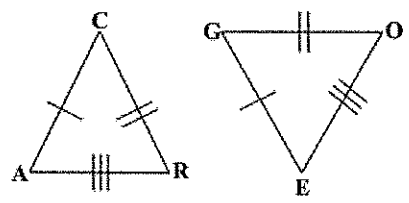
$$\text{So } y = 3x - 5$$

7. Can you prove each set of triangles are congruent? Explain using a congruence postulate or theorem.

a. *No, AAA Does not work*



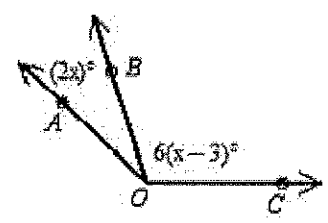
b. *yes, SSS*



7. Given: $m\angle AOC = 150$

Prove: $x = 21$

Statements	Reasons
1) $m\angle AOC = 150$	1.) given
2) $x\angle AOB + 6(x-3)\angle BOC = \angle AOC$	2.) angle addition postulate
3) $2x + 6(x-3) = 150$	3.) substitution
4) $2x + 6x - 18 = 150$	4.) distributive property
5) $8x - 18 = 150$	5.) combine like terms
6) $8x = 168$	6.) addition PofE
7) $x = 21$	7.) division PofE

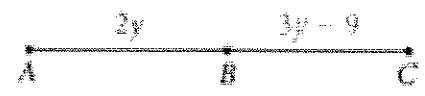


Drawing not to scale

8. Given: B is the midpoint of AC

Prove: $y = 9$

S	R
1) B is the midpoint of AC	1.) given
2) $AB = BC$	2.) def. of midpoint
3) $2y = 3y - 9$	3.) substitution
4) $-y = -9$	4.) subtraction PofE
5) $y = 9$	5.) division PofE



9. Angle A and angle B are complementary. Angle A = $x + 8$ and Angle B = $x - 4$. Find:

- a. $x = 43$
 - b. Angle A 51°
 - c. Angle B 39°
- $a.) x + 8 + x - 4 = 90$
 $2x + 4 = 90$
 $2x = 86$
 $x = 43$
- $b.) \angle A = 43 + 8 = 51$
 $c.) \angle B = 43 - 4 = 39$

10. Line AB contains points A (1,3) and B (2, 9).

- a. Find the slope of AB.
- b. Find the slope of a line parallel to AB.
- c. Find the slope of a line perpendicular to AB.

- a.) $m \text{ of } AB = \frac{9-3}{2-1} = \frac{6}{1} = 6$
- b.) $m = 6$ parallel lines have same slopes
- c.) $-\frac{1}{6}$ perpendicular lines have opposite reciprocal slopes