☐ **DO NOW – Geometry Regents Lomac 2014-2015** **Date** ____. **due** ____. **Adjacent, vertical, 360° and 180°** | **3.1**

(DN) We have discussed 5 types of angles. List the 5 types of angles and make a sketch for each. (these are in your notes)

Name _____**Per**_____

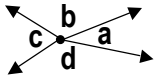
SLO: I can identify **angle relationships** involving adjacent and vertical angles and use the relationships to solve for unknown values .

☐ (1) **Angles: What we know**

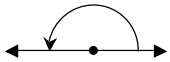
What do we know about angles already?

☐ (a) The number of degrees around a point is _____.

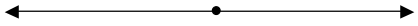
☐ (b) If four angles with measures *a*,*b*,*c*, and *d* are **adjacent angles** around a point, then the sum of the angles (*a* + *b* + *c* + *d*) is _____.



☐ (c) The number of degrees in a **straight angle** is _____.



☐ (d) If a straight angle is formed by two **adjacent angles**, the angles are called a _____. Add a ray to the diagram below to form a linear pair. The sum of the two angles is _____. When the sum of two angles is _____ the angles are _____.

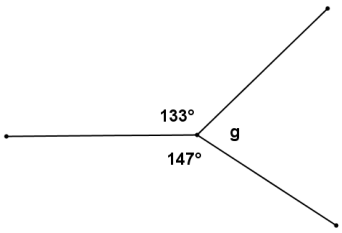


☐ (2) **Angles: Using relationships**

transparencies, dry erase markers, erasers

Use what you have stated in problem number 1 to find the measure of each unknown angle. Write an equation and solve it.

☐ (a) Determine the measure of angle *g*.



m∠*g* = _____ because _____

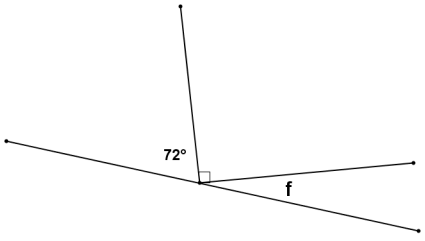
_____

_____

_____

_____

☐ (b) Determine the measure of angle *f*.



m∠*f* = _____ because _____

_____

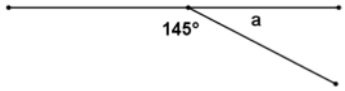
_____

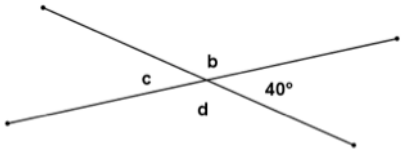
_____

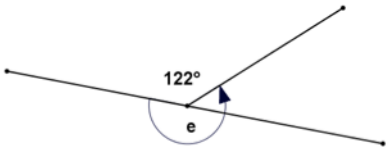
_____

☐ (3) **Angles: Vertical Angles**

☐ Use what you have stated in problem number 2 to find the measure of each unknown angle. Write an equation and solve it.







m∠*a* = _____ because _____

_____

m∠*b* = _____ because _____

_____

m∠*c* = _____ because _____

_____

m∠*d* = _____ because _____

_____

m∠*e* = _____ because _____

_____

Focus on the diagram with angles *b*, *c*, and *d* in problem number 3.

☐ (a) Complete the equations: *b* + 40 = _____ because _____

d + 40 = _____ because _____

b = *d* because _____

☐ (b) Angles *b* and *d* are called **vertical angles**. **Vertical angles** always have _____ angle measures.

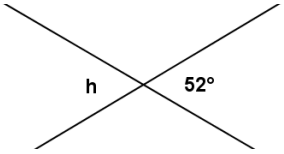
☐ (c) Describe how you can recognize **vertical angles** in a diagram _____

_____

Use what you have learned above to find the measure of *h*.

m∠*h* = _____ because _____

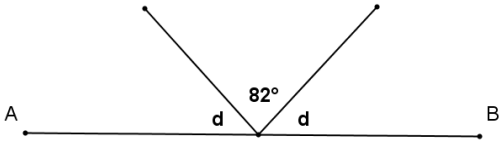
_____



☐ (4) **Angles: Use relationships to solve problems**

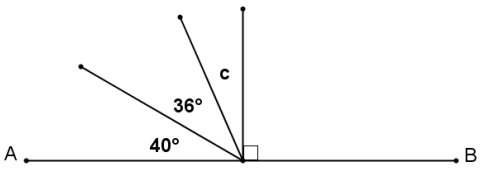
Write an equation and solve for each variable. State a relationship you used to write the equation for each explanation. You MUST do at least 8 of the 13 problems. Finish for homework what you don't finish in class.

☐ (a)



d = _____ because _____

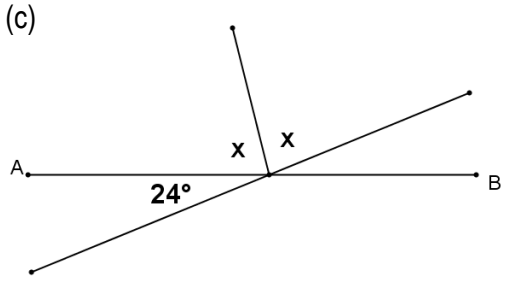
☐ (b)



c = _____ because _____

☐ (4) cont. **Angles: Use relationships to solve problems**

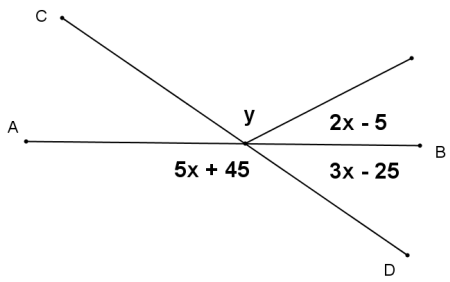
☐ (c)



x = _____ because _____

_____

☐ (d)



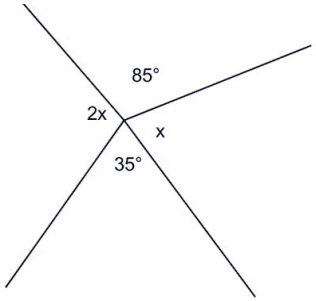
x = _____ because _____

_____

y = _____ because _____

_____

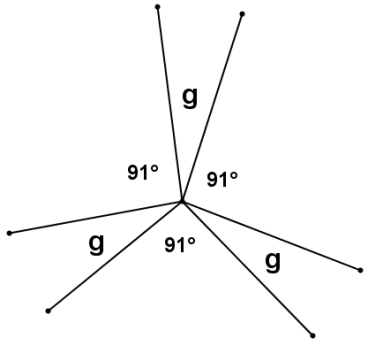
☐ (e)



x = _____ because _____

_____

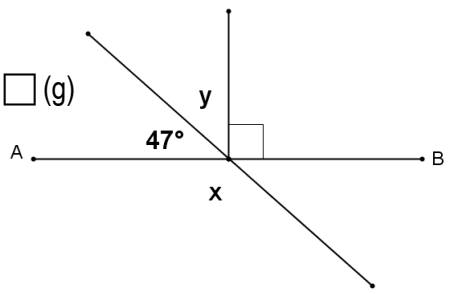
☐ (f)



g = _____ because _____

_____

☐ (g)



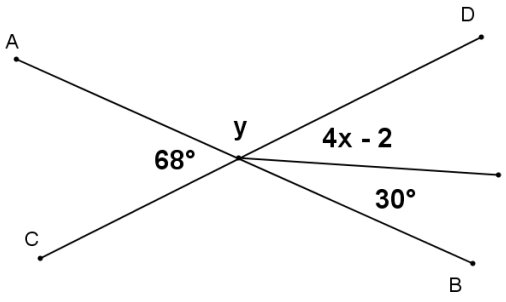
x = _____ because _____

_____

y = _____ because _____

_____

☐ (h)



x = _____ because _____

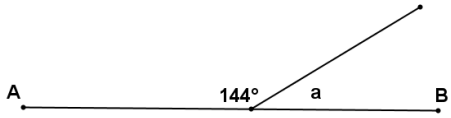
_____

y = _____ because _____

_____

☐ (4) cont. **Angles: Use relationships to solve problems**

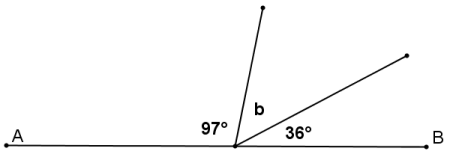
☐ (i)



a = _____ because _____

_____

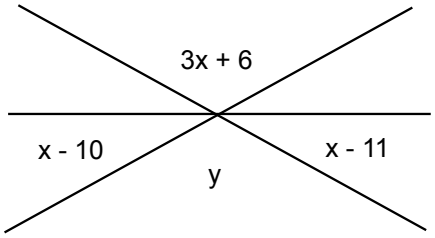
☐ (j)



b = _____ because _____

_____

☐ (k)



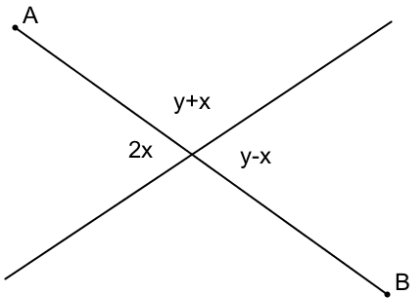
x = _____ because _____

_____

y = _____ because _____

_____

☐ (l)



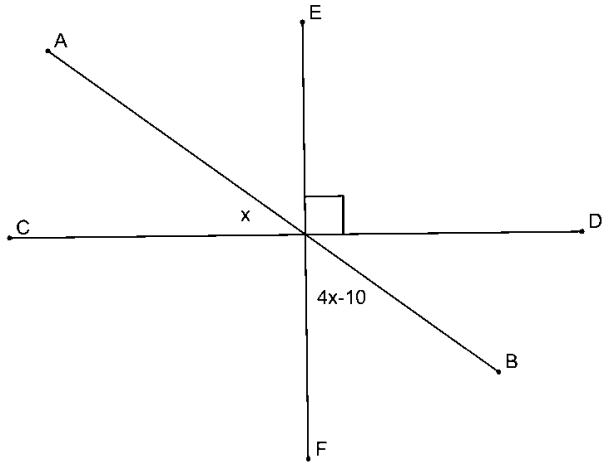
x = _____ because _____

_____

y = _____ because _____

_____

☐ (m)

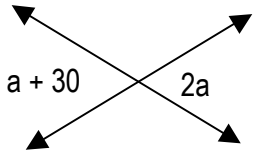


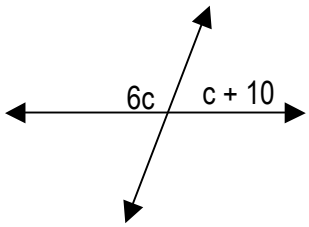
x = _____ because _____

_____

☐ (5) **Exit Ticket**

Find the measures of a and c. Show equations and explain your work.





a = ___ because_____

c = ___ because _____

☐ (6) **Homework** Complete all parts of problem number 4