

Chapter 2 Extra Review – Unknown Angles

1. In the accompanying diagram, lines a and b are parallel and line c is a transversal. List a pair of alternate interior angles 6/4 5/2
 corresponding angles 1/2 6/3 7/4 5/8
 alternate exterior angles 1/8 7/3
 same side interior angles 2/6 4/5

2. In the diagram below of two parallel lines cut by a transversal, $m\angle 1 = 5x + 12$ and $m\angle 2 = 7x$. Find $m\angle 1$.

Add to 180

$$5x + 12 + 7x = 180$$

$$12x + 12 = 180$$

$$12x = 168$$

$$x = 14$$

$5(14) + 12$
 $70 + 12$
82

3. Which choice below may **not** be used to name $\angle AIR$?

(1) $\angle RIA$ ✓ (2) $\angle I$ ✓
 (3) $\angle 5$ ✓ (4) $\angle RAI$

4. The incenter of a triangle is formed by (2)
 The circumcenter of a triangle is formed by (1)

(1) perpendicular bisectors
 (2) angle bisectors
 (3) medians
 (4) altitudes

5. The number of degrees in the measure of each of a pair of *vertical angles* formed by two intersecting lines is represented by $6x + 10$ and $5x + 25$. Find the measure of one of these angles.

$$6x + 10 = 5x + 25$$

$$x = 15$$

$$6(15) + 10$$

$$90 + 10$$
100

6. The measures of the angles of a triangle are $2x$, $3x$, and $4x$. The measure of the *largest* angle of this triangle is

$$2x + 3x + 4x = 180$$

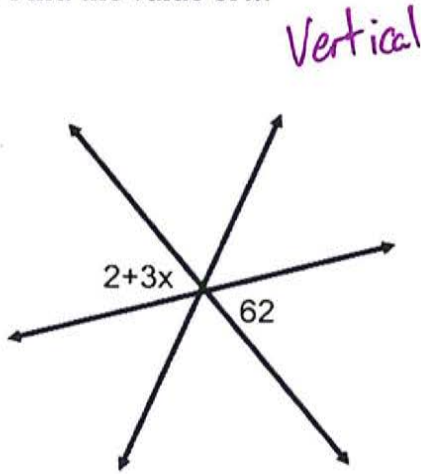
$$9x = 180$$

$$x = 20$$

$4(20)$
80

Part II:

7. Find the value of x .

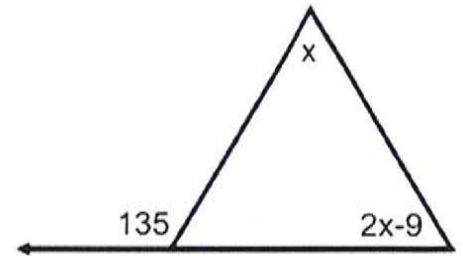


$$2 + 3x = 62$$

$$3x = 60$$

$$x = 20$$

8. Find the value of x .



$$135 = x + 2x - 9$$

$$135 = 3x - 9$$

$$144 = 3x$$

$$x = 48$$

Part III:

9. Using the figure below and the given information, find the value of x and $m\angle BOE$. SHOW ALL WORK!

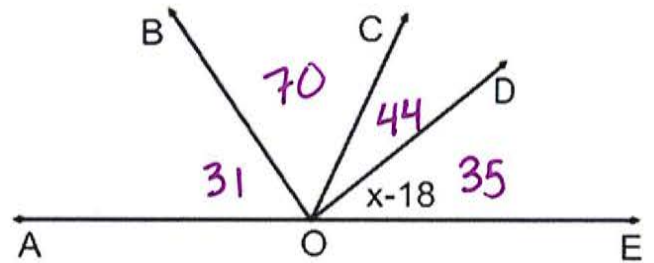
$$m\angle AOC = 101, m\angle COD = 44, m\angle BOC = 70$$

$$31 + 70 + 44 + x - 18 = 180$$

$$x + 127 = 180$$

$$x = 53$$

$$\angle BOE = 149$$



Part IV:

10. In the figure below, \overleftrightarrow{AB} and \overleftrightarrow{CD} are straight lines that intersect at O. $\overline{EO} \perp \overleftrightarrow{AB}$.

Find the following and give a reason for each step.

$$x = 30$$

$$x + 8 + 2x - 8 = 90$$

$$3x = 90$$

$$x = 30$$

Complimentary \angle s

$$y = 52$$

Vert \angle s

$$m\angle BOF = 32$$

\angle s on a line add to 180

