

2.1 – 2.2 Quiz Review

1. Solve for the variable using what you know about angle relationships. *Show Work.*

a.

$(x+16)^\circ$        $(4x-5)^\circ$   
 $x+16 = 4x-5$   
 $16 = 3x-5$   
 $21 = 3x$   
 $x = 7$

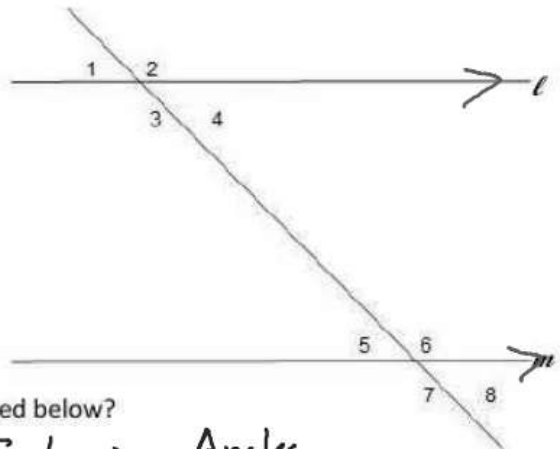
$21x+6$   
 $22x+2$   
 $21x+6 = 22x+2$   
 $6 = x+2$   
 $4 = x$

b.

$(9x-3)^\circ$   
 $(6x+33)^\circ$   
 $6x+33 + 9x-3 = 180$   
 $15x+30 = 180$   
 $15x = 150$   
 $x = 10$

For questions 1-7 use the image on the right. For all questions, lines  $l$  and  $m$  are parallel.

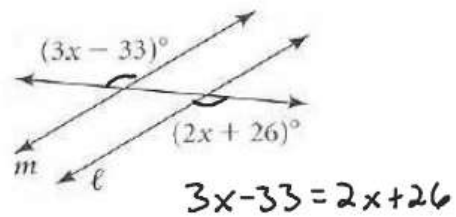
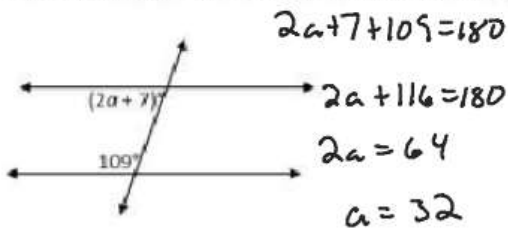
- 1) List all the pairs of corresponding angles.  
 $\angle 2 + \angle 6$        $\angle 3 + \angle 7$   
 $\angle 1 + \angle 5$        $\angle 4 + \angle 8$
- 2) List all the pairs of alternate exterior angles.  
 $\angle 2 + \angle 7$   
 $\angle 1 + \angle 8$
- 3) List all the pairs of vertical angles.  
 $\angle 1 + \angle 4$        $\angle 5 + \angle 8$   
 $\angle 2 + \angle 3$        $\angle 6 + \angle 7$
- 4) List all the pairs of same side interior angles.  
 $\angle 3 + \angle 5$   
 $\angle 4 + \angle 6$



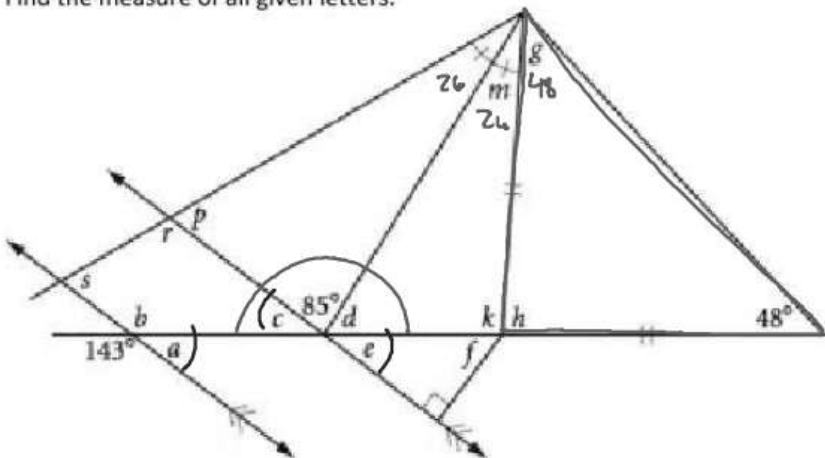
What vocabulary term best classifies the angle pairs listed below?

- 5)  $\angle 3$  and  $\angle 6$  or  $\angle 4$  and  $\angle 5$       **Alternate Interior Angles**
- 6)  $\angle 5$  and  $\angle 6$  or  $\angle 2$  and  $\angle 4$  or  $\angle 5$  and  $\angle 7$       **Linear Pair**
- 7)  $\angle 1$  and  $\angle 7$  or  $\angle 2$  and  $\angle 8$       **Same-Side Exterior  $\angle$ 's**

Find the value of the variable to make the lines parallel.



Find the measure of all given letters.



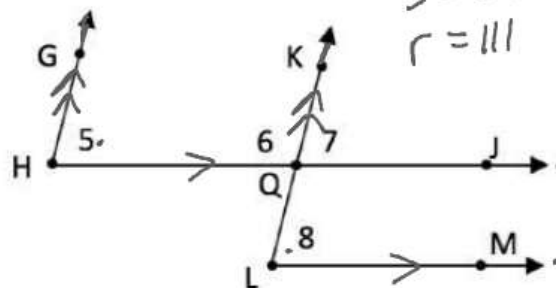
$$x - 33 = 26$$

$$x = 59$$

$$\begin{aligned}
 a &= 37^\circ & e &= 37^\circ \\
 b &= 143^\circ & f &= 53^\circ \\
 c &= 37^\circ & g &= 48^\circ \\
 d &= 58^\circ & h &= 84^\circ \\
 p &= 69^\circ & k &= 96^\circ \\
 s &= 69^\circ & m &= 26^\circ \\
 r &= 111^\circ
 \end{aligned}$$

6. Given:  $\overline{HJ} \parallel \overline{LM}$   
 $\overline{HG} \parallel \overline{LK}$

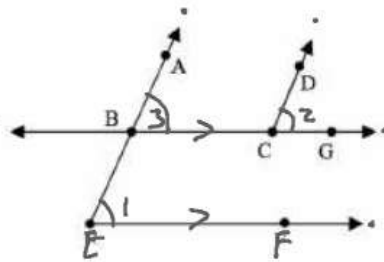
Prove:  $m\angle 5 = m\angle 8$



Statement	Reason
1) $\overline{HJ} \parallel \overline{LM}$ $\overline{HG} \parallel \overline{LK}$	1) Given
2) $\angle 5 \cong \angle 7$	2) Corresponding $\angle$ 's
3) $\angle 7 \cong \angle 8$	3) Corresponding $\angle$ 's
4) $\angle 5 \cong \angle 8$	4) Sub prop
5) $m\angle 5 = m\angle 8$	5) Def $\cong \angle$ 's

Given:  $\overline{BC} \parallel \overline{EF}$ ,  $\angle BEF \cong \angle DCG$   
 Prove:  $\overline{AB} \parallel \overline{DC}$

Statement	Reason
1) $\overline{BC} \parallel \overline{EF}$ $\angle 1 \cong \angle 2$	1) Given
2) $\angle 1 \cong \angle 3$	2) Corresponding $\angle$ 's
3) $\angle 3 \cong \angle 2$	3) Sub prop.
4) $\overline{AB} \parallel \overline{DC}$	4) Converse of Corresponding $\angle$ 's



In the diagram below,  $\overline{MN} \parallel \overline{AF}$ ,  $m\angle ABC = 34^\circ$ , and  $m\angle FBD = 53^\circ$ .  
 Find the measure of each indicated angle. Provide reasoning to support your answers.

a.  $m\angle EBF = \underline{34^\circ}$   
 Reason Vertical Angles

b.  $m\angle EBA = \underline{146^\circ}$   
 Reason Linear Pair  $180 - 34$

c.  $m\angle DBC = \underline{93^\circ}$   
 Reason  $180 - 53 - 34$

d.  $m\angle EKN = \underline{146}$   
 Reason Corresponding  $\angle$ 's

d.  $m\angle MKB = \underline{146}$   
 Reason Vertical  $\angle$ 's  $\cong$ .

