

### 3.3 Practice Solutions

Directions 1-3: Which segments/lines are parallel. JUSTIFY your answer.

1)

$\vec{BE} \parallel \vec{CG}$  converse to CORR.  $\angle$ 's

2)

$\vec{PS} \parallel \vec{QT}$  converse to CORR.  $\angle$ 's

3)

$\vec{QR} \parallel \vec{MT}$  converse to CORR.  $\angle$ 's

Directions: Find the measure of the indicated angle that makes lines  $u$  and  $v$  parallel.

4)

$120 + 60 = 180$

5)

6)

7)

Directions: Find the values of  $x$  that will make lines  $u$  and  $v$  parallel.

8)

$100 = x + 111$   
 $-111 \quad -111$   
 $\hline -11 = x$

9)

$120 = 19x + 6$   
 $-6 \quad -6$   
 $\hline 114 = 19x$   
 $\frac{114}{19} = \frac{19x}{19}$   
 $6 = x$

10)

$(x + 66) + (x + 126) = 180$   
 $2x + 192 = 180$   
 $-192 \quad -192$   
 $\hline 2x = -12$   
 $\frac{2x}{2} = \frac{-12}{2}$   
 $x = -6$

11)

$x + 113 = 104$   
 $-113 \quad -113$   
 $\hline x = -9$

Directions: Use the following diagram to determine which lines (if any) are parallel. State the postulate or theorem that justifies your answer.

12)  $\angle 2$  is supplementary to  $\angle 3$

$a \parallel b \rightarrow$  Same-side Interior  $\angle$ 's

13)  $\angle 9 \cong \angle 12$

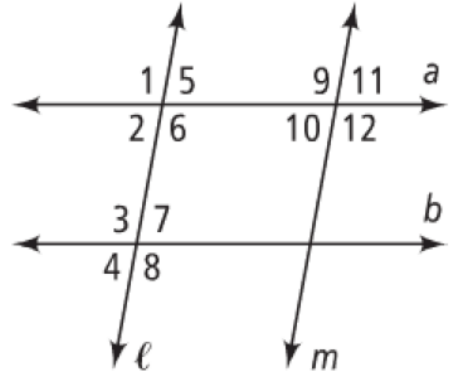
NO LINES PARALLEL

14)  $\angle 5 \cong \angle 10$

$l \parallel m$  by ALT. INT  $\angle$ 's

15)  $\angle 7 \cong \angle 11$

NO LINES PARALLEL



Complete the following flow proof.

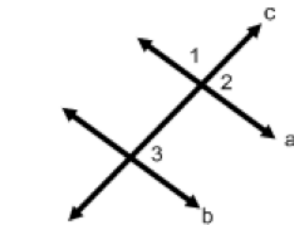
Given:  $\angle 1$  and  $\angle 3$  are supplementary  
 Prove:  $a \parallel b$

$\angle 1$  and  $\angle 3$  are supplementary  
 a. GIVEN

d.  $\angle 2 \cong \angle 3$   
 Supplements of the same angle are congruent

b.  $m\angle 1 + m\angle 2 = 180^\circ$   
 Def. of a linear pair.

$\angle 1$  and  $\angle 2$  are supplementary  
 c. Def of supp.  $\angle$ 's



$a \parallel b$   
 e. Converse to Corr  $\angle$ 's