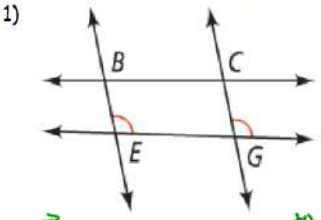
3.3 Practice Solutions

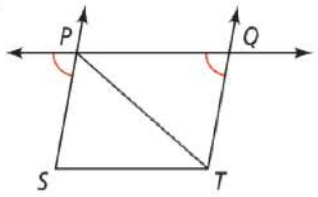
Directions 1-3: Which segments/lines are parallel. JUSTIFY your answer.

1)



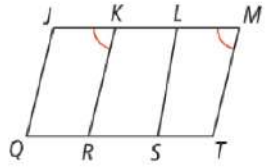
$\overleftrightarrow{BE} \parallel \overleftrightarrow{CG}$ converse to corr ∠'s

2)



$\overleftrightarrow{PS} \parallel \overleftrightarrow{QT}$ converse to corr. ∠'s

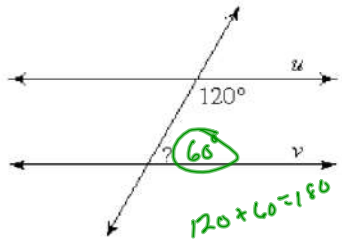
3)



$\overleftrightarrow{KR} \parallel \overleftrightarrow{MT}$ converse to corr ∠'s

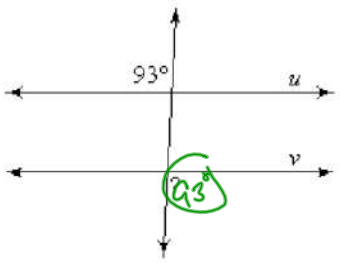
Directions: Find the measure of the indicated angle that makes lines u and v parallel.

4)

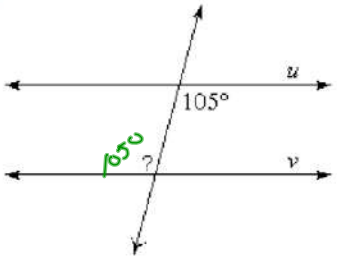


$120 + 60 = 180$

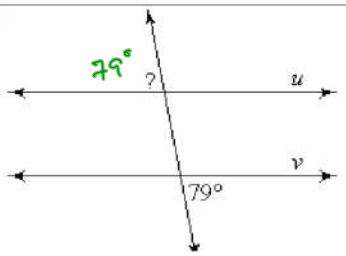
5)



6)

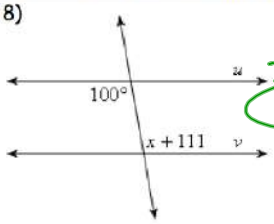


7)



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

8)

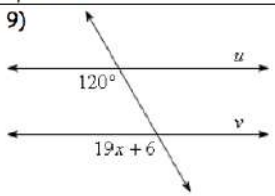


$100 = x + 111$

$-111 \quad -111$

$-11 = x$

9)



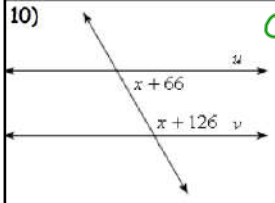
$120 = 19x + 6$

$-6 \quad -6$

$\frac{114}{19} = \frac{19x}{19}$

$6 = x$

10)



$(x + 66) + (x + 126) = 180$

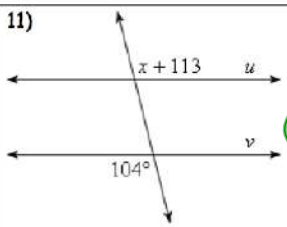
$2x + 192 = 180$

$-192 \quad -192$

$\frac{2x}{2} = \frac{-12}{2}$

$x = -6$

11)

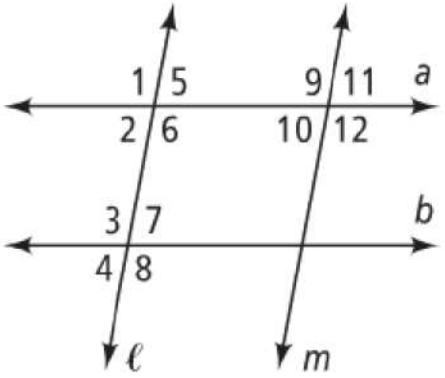


$x + 113 = 104$

$-113 \quad -113$

$x = -9$

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 ∥ b → Same-side interior ∠'s

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

NO LINES PARALLEL

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

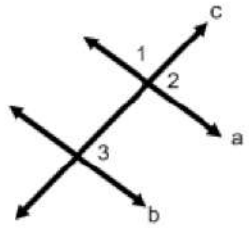
ℓ ∥ m by ALT. INT ∠s

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 anlge are congruent

$a \parallel b$

e. Converse to Corr ∠'s

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. ∠'s