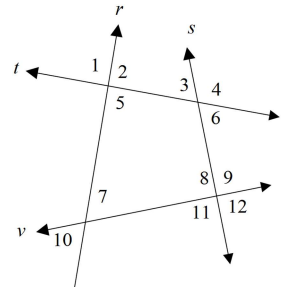


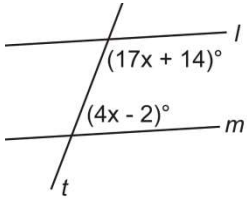
For #1 – 6, determine which lines, if any, are parallel with the given information. Write the postulate or theorem that justifies your answer.

- 1) $\angle 5 \cong \angle 3$
- 2) $\angle 10 \cong \angle 2$
- 3) $\angle 6 \text{ supp } \angle 9$
- 4) $\angle 9 \cong \angle 7$
- 5) $\angle 11 \cong \angle 4$
- 6) $\angle 5 \text{ supp } \angle 7$

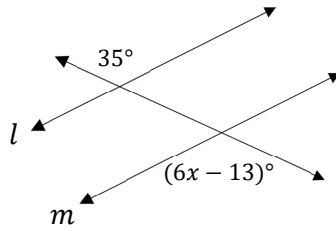


For #7 – 10, find the value of x so that the lines m and l are parallel.

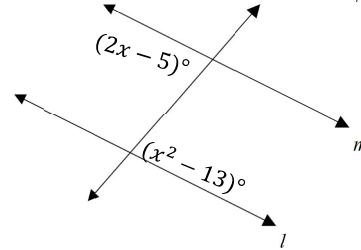
7)



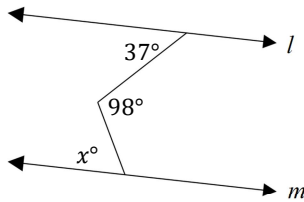
8)



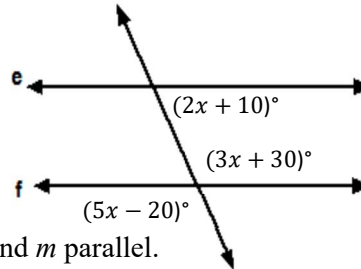
9)



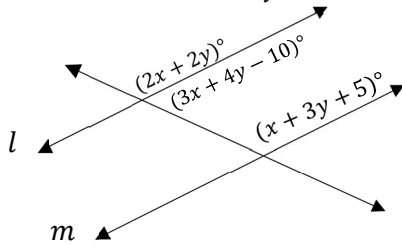
10)



11) Are e and f parallel in the diagram below? Explain.

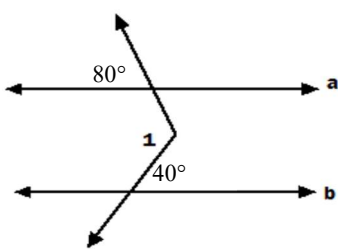


12) Find the values of x and y that would make lines l and m parallel.

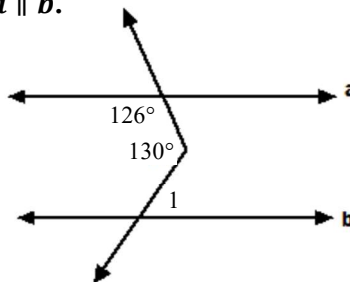


For #13 – 14, find $m\angle 1$ that would make $a \parallel b$.

13)



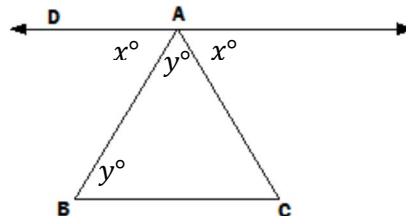
14)



For #15 – 17, is the statement Sometimes, Always, or Never true?

- 15) If two angles are corresponding angles, then they are congruent.
- 16) If consecutive interior angles are congruent, then lines are parallel.
- 17) If two lines are parallel, then alternate exterior angles are congruent.

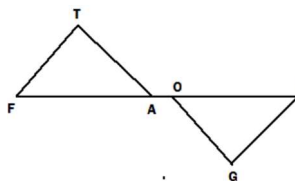
18) If $\overleftrightarrow{DA} \parallel \overleftrightarrow{BC}$, is $\triangle ABC$ equilateral? Also, find $m\angle DAB$.



For #19 – 23, complete each proof.

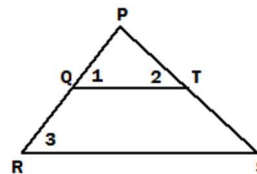
19) Given: $\angle FAT \cong \angle HOG$

Prove: $\overline{AT} \parallel \overline{GO}$



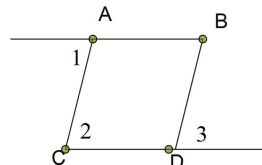
20) Given: $\angle 1 \text{ comp } \angle 2$
 $\angle 3 \text{ comp } \angle 2$

Prove: $\overline{QT} \parallel \overline{RS}$



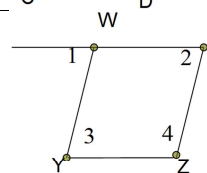
21) Given: $\angle 1 \cong \angle 3$; $\overline{AC} \parallel \overline{BD}$

Prove: $\overline{AB} \parallel \overline{CD}$



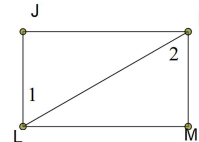
22) Given: $\angle 2 \cong \angle 3$; $\overline{WX} \parallel \overline{YZ}$

Prove: $\overline{WY} \parallel \overline{XZ}$



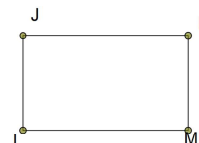
23) Given: $\angle 2 \cong \angle 1$; $\overline{LJ} \perp \overline{ML}$

Prove: $\overline{KM} \perp \overline{ML}$



24) Given: $\overline{LJ} \parallel \overline{MK}$; $\overline{LJ} \perp \overline{ML}$

Prove: $\angle M$ is a right angle

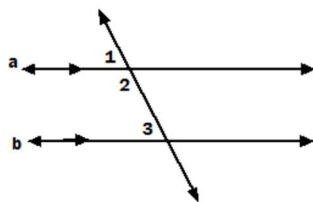


25) Find: $m\angle 1$

$$m\angle 1 = (x + 3y)^\circ$$

$$m\angle 2 = (2x + 30)^\circ$$

$$m\angle 3 = (5y + 20)^\circ$$



Answers:

- 1) $r \parallel s$; if alt int $\angle s \cong$, then $\parallel$ lines 2) $t \parallel v$; if alt ext $\angle s \cong$, then $\parallel$ lines 3) $t \parallel v$; if consec int $\angle s$ supp then $\parallel$ lines
4) $r \parallel s$; if corresp $\angle s \cong$, then $\parallel$ lines 5) $t \parallel v$; if alt int $\angle \cong$, then $\parallel$ lines 6) $t \parallel v$; if consec int $\angle s$ supp then $\parallel$ lines
7) 8 8) 8 9) 4 10) 61 11) no; $x = 25$, and thus consec int $\angle s$ are not supp.
12) $x = 20$; $y = 15$ 13) 120 14) 76 15) S 16) S 17) A
18) Yes, all three angles are congruent; 60 degrees 19) Proof; 2 steps 20) proof; 3 steps
21) proof; 4 steps 22) proof; 4 steps 23) proof; 3 steps 24) proof; 3 steps
25) 70