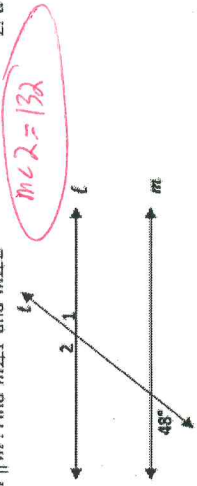


Answer Key

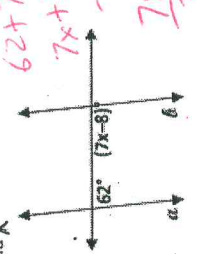
48 and c1 are Alt. Exterior Angles
so $m\angle 1 = 48$

1. $l \parallel m$. Find $m\angle 1$ and $m\angle 2$



$m\angle 2 = 132$

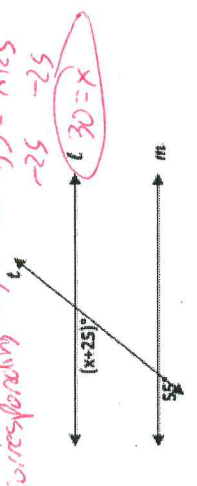
2. $a \parallel b$. Find x



$62 + 7x - 8 = 180$
 $7x + 54 = 180$
 $7x = 126$
 $x = 18$

3. $l \parallel m$. Find x .

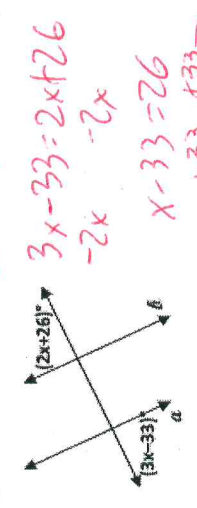
Corresponding angles so $55 = x + 25$



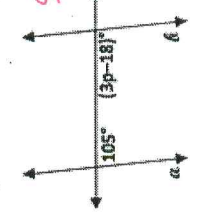
$55 = x + 25$
 $30 = x$

Alt. Exterior.

6. $a \parallel b$. Find p .



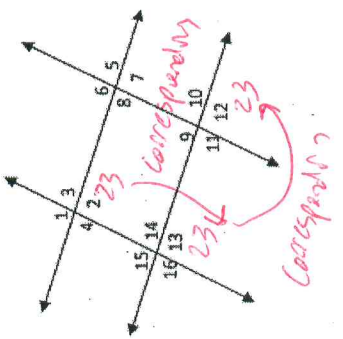
$3x - 33 = 2x + 26$
 $-2x$
 $x - 33 = 26$
 $+33$
 $x = 59$



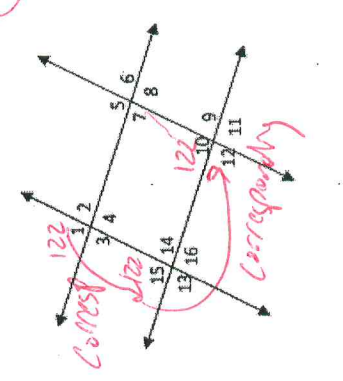
$105 = (3p - 18)$
 $123 = 3p$
 $3p = 123$
 $p = 41$

Same-side Int. $105 + 3p - 18 = 180$
 $3p + 87 = 180$
 -87
 $3p = 93$
 $p = 31$

7. If $m\angle 2 = 23^\circ$, find $m\angle 12$.

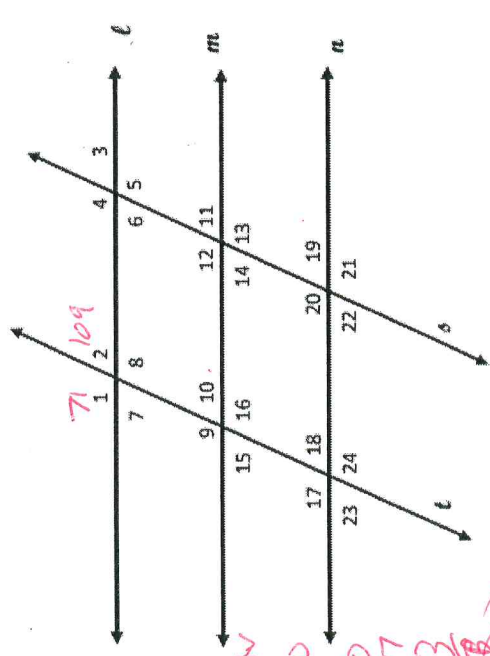


8. If $m\angle 1 = 122^\circ$, find $m\angle 10$.



9. Given $l \parallel m$ and $s \parallel t$, and $m\angle 1 = 71^\circ$, find:

- $m\angle 2 = 109$
- $m\angle 3 = 109$
- $m\angle 4 = 71$
- $m\angle 5 = 71$
- $m\angle 6 = 109$
- $m\angle 7 = 109$
- $m\angle 8 = 71$
- $m\angle 9 = 71$
- $m\angle 10 = 109$
- $m\angle 11 = 109$
- $m\angle 12 = 71$
- $m\angle 13 = 71$
- $m\angle 14 = 109$
- $m\angle 15 = 109$
- $m\angle 16 = 71$
- $m\angle 17 = 71$
- $m\angle 18 = 109$
- $m\angle 19 = 109$
- $m\angle 20 = 71$
- $m\angle 21 = 71$
- $m\angle 22 = 109$
- $m\angle 23 = 109$
- $m\angle 24 = 71$



10. Vertical angles are Always congruent.

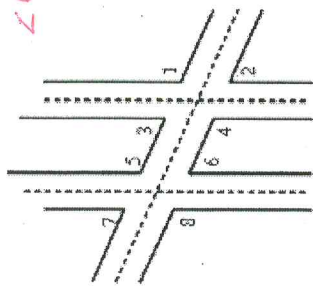
11. Corresponding angles are Sometimes congruent.

Only if the lines are parallel.

Indicate if the following pairs of lines are coinciding, parallel, perpendicular, or neither

- 12. $x - 5y = 0$ and $y = \frac{1}{5}(x + 5)$
- 13. $y - 7x = 6$ and $x + 7x = 8$
- 14. $6x - 4y = 24$ and $3y + 2x = 12$

2. $\angle 6$ and $\angle 7$ are vertical angles



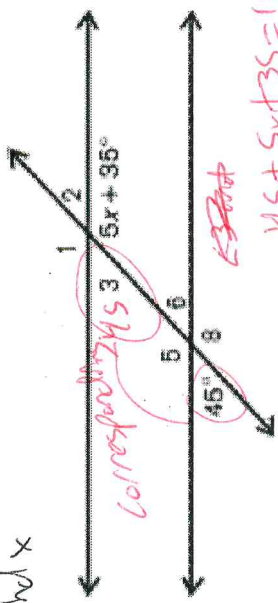
So $m\angle 7 = 72$
 $\angle 6$ and $\angle 3$ are Alt. Interior Angles
 So $m\angle 3 = 72$

$m\angle 7 + m\angle 3 = 144$

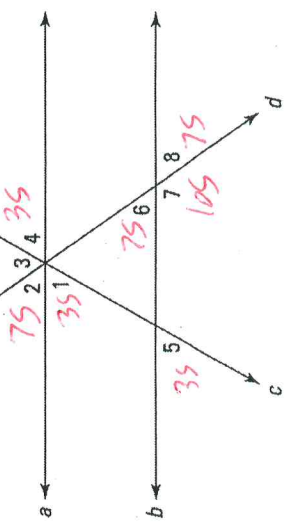
a. If $m\angle 6 = 72^\circ$, what is the sum of $m\angle 7$ and $m\angle 3$?
 Explain how you found your answer using angle relationships or theorems/postulates.

b. Which of the five angle relationships formed from parallel lines and transversals describes the relationship between $\angle 1$ and $\angle 8$? *Alternate Exterior Angles*

3. Find x



$75 + 35 = 110$
 $180 - 110 = 70$
 $75 + 70 + 35 = 180$
 $5x + 35 = 180$
 $5x = 145$
 $x = 29$

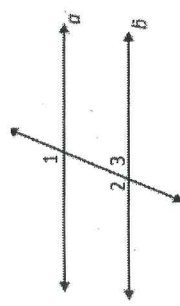


$m\angle 5 = 35$ and $m\angle 7 = 105$

Find $m\angle 1, m\angle 2, m\angle 3, m\angle 4, m\angle 6$, and $m\angle 8$.

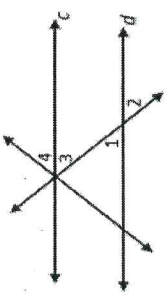
Fill in the blanks.

Given: $a \parallel b$
 Prove: $m\angle 1 + m\angle 3 = 180^\circ$



Statement	Reason
1. $a \parallel b$	1. Given
2. $\angle 1 \cong \angle 2$	2. Corresponding angle theorem
3. $m\angle 1 = m\angle 2$	3. Definition of congruent angles
4. $\angle 2$ and $\angle 3$ are a linear pair	4. Definition of a linear pair
5. $m\angle 2 + m\angle 3 = 180$	5. If two angles form a linear pair, their angle measures sum to 180° .
6. $m\angle 1 + m\angle 3 = 180^\circ$	6. Substitution

Given: $\angle 4 \cong \angle 3; c \parallel d$
 Prove: $\angle 4 \cong \angle 2$



Statement	Reason
1. $\angle 4 \cong \angle 3; c \parallel d$	1. Given
2. $\angle 3 \cong \angle 1$	2. Alternate Interior Angle Theorem
3. $\angle 4 \cong \angle 1$	3. Transitive Property of Congruence
4. $\angle 1 \cong \angle 2$	4. Vertical Angle Theorem
5. $\angle 4 \cong \angle 2$	5. Transitive Property