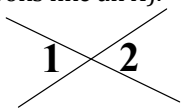
Name: _____ Per: _____

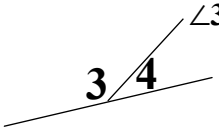
Angle Pairs: Vertical, Linear, Complementary, & Supplementary

**Vertical Angles** are opposite angles created by crossed lines (looks like an X).
**VERTICAL ANGLES ARE CONGRUENT.**




**∠1 & ∠2 are vertical…**
**CONGRUENT!**
**$m\angle 1 = m\angle 2$**

**A Linear Pair** is a set of two angles, connected at the corner & sharing a side), that, together, are a line.
**A LINEAR PAIR ADDS TO EQUAL 180˚.**




**∠3 & ∠4 are a linear pair…**
**ADD TO = 180˚!**
**$m\angle 3 + m\angle 4 = 180$**

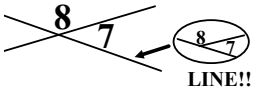
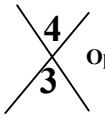
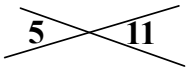
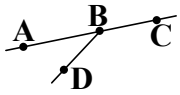
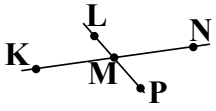
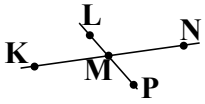
**Complementary Angles** are any two angles whose measures **ADD TO EQUAL 90˚.**

**∠1 & ∠2 are complementary…**
**$m\angle 1 + m\angle 2 = 90^\circ$**

**Supplementary Angles** are any two angles whose measures **ADD TO EQUAL 180˚.**

**∠1 & ∠2 are supplementary…**
**$m\angle 1 + m\angle 2 = 180^\circ$**

**Identify the type of angle pair.**

| | | | |
|---|---|---|---|
| **EXAMPLE** ∠8 & ∠7<br>  <br><br>**LINE!!**<br>Type: **LINEAR PAIR**<br>Process: **ADD TO = 180˚** | **EXAMPLE** $\angle F$ & $\angle P$<br>$m\angle F = 37^\circ$ & $m\angle P = 53^\circ$<br>**37+53=90**<br>Type: **COMPLEMENTARY**<br>Process: **ADD TO = 90˚** | **EXAMPLE** ∠4 & ∠3<br>  <br><br>**Opposite an X!!**<br>Type: **VERTICAL ANGLES**<br>Process: **THEY'RE EQUAL** | **EXAMPLE** ∠9 & ∠2<br>$m\angle 9 = 78^\circ$ & $m\angle 2 = 102^\circ$<br>**78+102=180**<br>Type: **SUPPLEMENTARY**<br>Process: **ADD TO = 180˚** |
| 1. ∠5 & ∠11<br>  <br><br>Type: _____<br>Process: _____ | 2. ∠4 & ∠2<br>$m\angle 4 = 22^\circ$ & $m\angle 2 = 68^\circ$<br>Type: _____<br>Process: _____ | 3. $\angle ABC$ & $\angle MNP$<br>$m\angle ABC = 90^\circ$<br>& $m\angle MNP = 90^\circ$<br>Type: _____<br>Process: _____ | 4. ∠6 & ∠8<br>  <br><br>Type: _____<br>Process: _____ |
| 5. $\angle ABD$ & $\angle CBD$<br>  <br><br>Type: _____<br>Process: _____ | 6. ∠8 & ∠10<br>$m\angle 8 = 16^\circ$ & $m\angle 10 = 164^\circ$<br>Type: _____<br>Process: _____ | 7. ∠6 & ∠9<br>  <br><br>Type: _____<br>Process: _____ | 8. $\angle A$ & $\angle B$<br>$m\angle A = 81^\circ$ & $m\angle B = 9^\circ$<br>Type: _____<br>Process: _____ |
| 9. ∠3 & ∠4<br>$m\angle 3 = 74^\circ$ & $m\angle 4 = 16^\circ$<br>Type: _____<br>Process: _____ | 10. $\angle KML$ & $\angle PMK$<br>  <br><br>Type: _____<br>Process: _____ | 11. $\angle LMN$ & $\angle PMK$<br>  <br><br>Type: _____<br>Process: _____ | 12. $\angle Q$ & $\angle M$<br>$m\angle Q = 107^\circ$ & $m\angle M = 73^\circ$<br>Type: _____<br>Process: _____ |

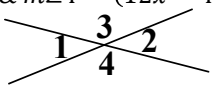
**Evaluate. Determine the measure of <u>all</u> of the <u>numbered</u> angles.**

13. $m\angle 5 = (9x + 6)^\circ$
& $m\angle 2 = (6x + 9)^\circ$


Type: _____ $m\angle 2 =$ ____ $m\angle 3 =$ ____

Process: _____ $m\angle 4 =$ ____ $m\angle 5 =$ ____

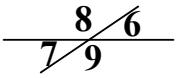
14. $m\angle 3 = (8x + 12)^\circ$
& $m\angle 4 = (12x - 48)^\circ$




Type: _____ $m\angle 1 =$ ____ $m\angle 2 =$ ____

Process: _____ $m\angle 3 =$ ____ $m\angle 4 =$ ____

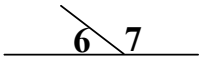
15. $m\angle 6 = (4x + 1)^\circ$
& $m\angle 7 = (5x - 8)^\circ$




Type: _____ $m\angle 6 =$ ____ $m\angle 7 =$ ____

Process: _____ $m\angle 8 =$ ____ $m\angle 9 =$ ____

16. $m\angle 6 = (6x + 10)^\circ$
& $m\angle 7 = (15x + 2)^\circ$




Type: _____

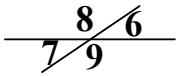
Process: _____ $m\angle 6 =$ ____ $m\angle 7 =$ ____

17. $m\angle 4 = (11x + 10)^\circ$
& $m\angle 2 = (14x - 20)^\circ$


Type: _____ $m\angle 2 =$ ____ $m\angle 3 =$ ____

Process: _____ $m\angle 4 =$ ____ $m\angle 5 =$ ____

18. $m\angle 8 = (16x + 27)^\circ$
& $m\angle 6 = (4x + 13)^\circ$




Type: _____ $m\angle 6 =$ ____ $m\angle 7 =$ ____

Process: _____ $m\angle 8 =$ ____ $m\angle 9 =$ ____

**Evaluate.**

19. $\angle 1$ & $\angle 2$ are complementary
$m\angle 1 = 72^\circ$. $m\angle 3 = ?$

Process: _____

20. $\angle 8$ & $\angle 9$ are supplementary.
$m\angle 8 = 111^\circ$. $m\angle 9 = ?$

Process: _____

21. $\angle 5$ & $\angle 6$ are supplementary.
$m\angle 8 = (4x - 2)^\circ$ & $m\angle 9 = (5x - 29)^\circ$.
$m\angle 8 = ?$

Process: _____

22. $\angle 4$ & $\angle 5$ are complementary
$m\angle 4 = (2x + 20)^\circ$, $m\angle 5 = (5x + 7)^\circ$
$m\angle 4 = ?$

Process: _____

23. $\angle 3$ & $\angle 4$ are supplementary.
$m\angle 3 = (8x + 10)^\circ$,
$m\angle 4 = (10x + 26)^\circ$. $m\angle 4 = ?$

Process: _____

24. $\angle 7$ & $\angle 8$ are complementary.
$m\angle 7 = (x + 42)^\circ$. $m\angle 8 = (2x - 42)^\circ$
$m\angle 7 = ?$

Process: _____