**Adjacent angles**

**Complementary angles**

**Pairs of Angles**

**Supplementary angles**

**Vertical angles**

**Linear Pair of Angles**

**Adjacent Angles**

|  |  |
| --- | --- |
| $ T S$ $$ $$$ K L$ | **Adjacent angles are angles that share a common side and have the same vertex, but have no interior points in common.** |

**A Linear Pair of Angles**

|  |  |
| --- | --- |
| $ C$ $$ A O B$$ | **Two angles form a linear pair if and only if they are adjacent and their non-common sides are opposite rays.** |

**Sample Problem 1**: **Tell whether the angles are only adjacent, adjacent and form a linear pair or not adjacent.**

|  |  |  |  |
| --- | --- | --- | --- |
| **a.** | $$∠BOH and ∠AOR $$$$∠HOR and ∠AOR$$$∠BOH and ∠AOH$ $ R H$ $$ $$$$ A O B$$ | **b.**  | $$∠SFV and ∠SFC $$$$∠TFP and ∠SFP$$$∠CFP and ∠SFV$ $ P C $$$ S F T$$$$ V $$ |
|  |  |  |  |

**Complementary and Supplementary Angles**

|  |  |
| --- | --- |
| $ $$G$$ 55° 35° $$$ $$$$ K $$ | **Two angles are complementary if and only if the sum of their degree measures is**$ 90$ **.**$$m∠K+m∠G=90$$ |
| $ $$ 120° 60° $$$ Z L$$ | **Two angles are supplementary if and only if the sum of their degree measures is** $0$ **.**$$m∠Z+m∠L=180$$ |

**Sample Problem 2**: **Name a pair of adjacent complementary angles.**

|  |  |  |  |
| --- | --- | --- | --- |
| **a.** | $ P K C $$$ 75° 30°$$$$ 15° 60°$$$$ S F T$$ | **b.** | $ T C $$ Q 40°$$$ 45° 62°$$$ 45° B$$$ M 28° $$$$ J $$$$ N $$ |
|  |  |  |  |

**Sample Problem 3**: **Name a pair of adjacent supplementary angles.**

|  |  |  |  |
| --- | --- | --- | --- |
| **a.** | $ H $$$ $$$$ 100° 80°$$$$ D 144° C 36° A$$$$ S $$ | **b.** | $ Y H $$ X 40°$$ 45° 50°$$ L$$$ 135° J $$$$ $$$$ I $$ |
|  |  |  |  |

**Congruent angles**

|  |  |
| --- | --- |
| $ $$60°$$ $$ 60°$$L$$M$$$ $$ | **Two angles are congruent if and only if they have the same degree measure.**  |
| $$m∠L =m∠M $$$$∠L ≅∠M $$ |

**Vertical Angles**

|  |  |
| --- | --- |
| $$ $$$ K E $ $ 2$$ 1 T 3$$ 4 $$L$$A $ | **Two angles are vertical if and only if they are two nonadjacent angles formed by a pair of intersecting lines.****Vertical angles are congruent.** |
| $$∠2 ≅∠4 $$$$∠1 ≅∠3 $$ |

**Sample Problem 4**: **Find the indicated angle measures.**

|  |  |  |
| --- | --- | --- |
| **a.** | $m∠ADG=38$**Find** $ m∠LDC$ **,**$ m∠LDA, and m∠CDG.$$ G C$$$ 38°$$$$ D $$$ A L$  |  |
| **b.** | $m∠DMR=121$**Find** $ m∠TMF$ **,**$ m∠FMR, and m∠TMD$$ R D$$$ 121°$$$$ $$$$ M $$$ F T$  |  |