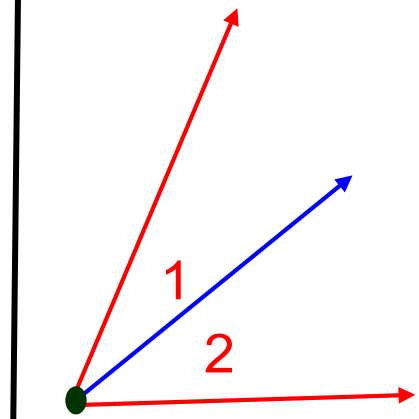
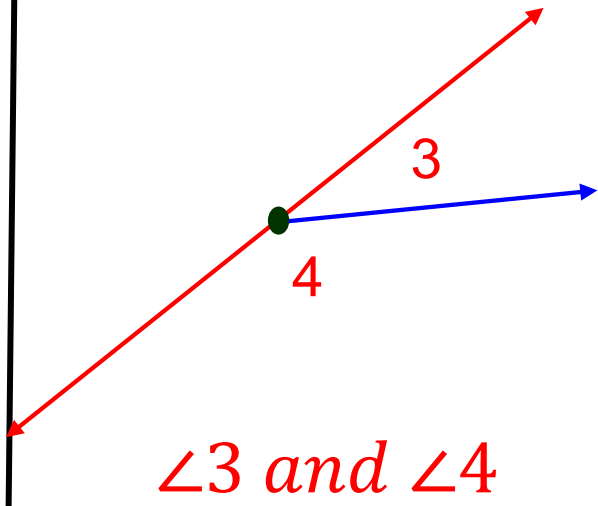
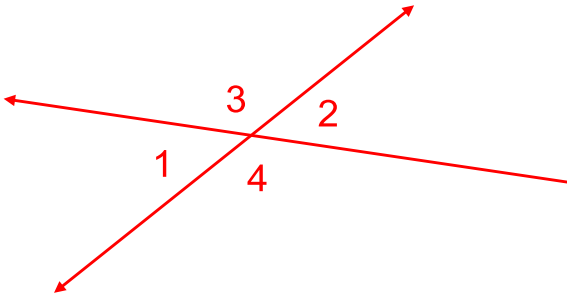
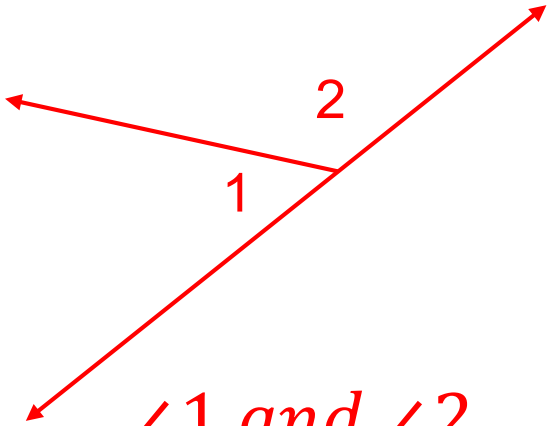
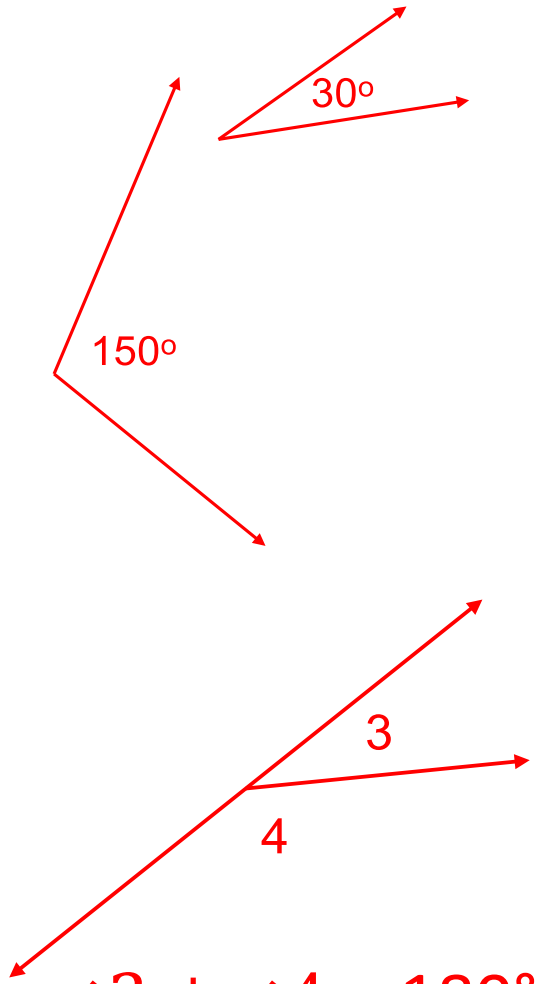
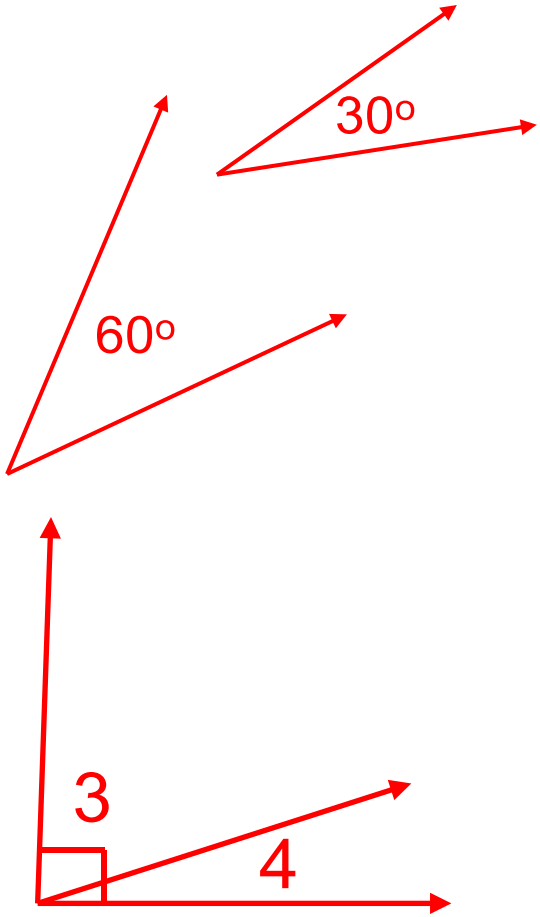
IC 19

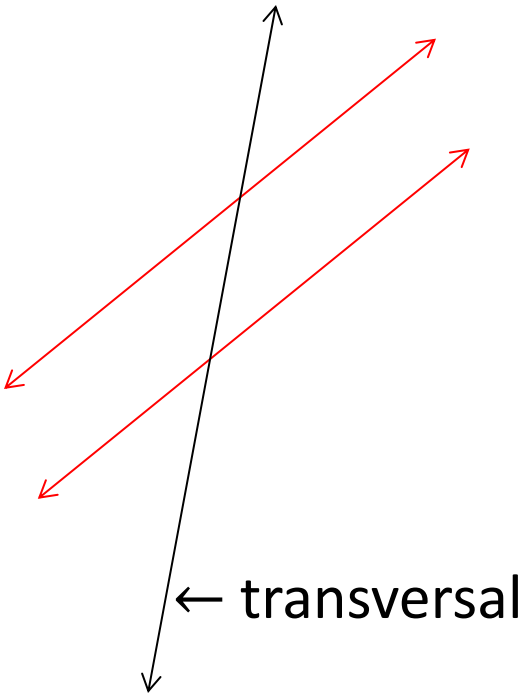
Angle Pairs

Pairs of Angles	Definition	Sketch
Adjacent Angles	Angles that share a vertex and a ray and NO interior points	 $\angle 1 \; and \; \angle 2$  $\angle 3 \; and \; \angle 4$

Pairs of Angles	Definition	Sketch
Vertical Angles	Non-adjacent angles formed by the intersection of 2 lines.	 $\angle 1 \; and \; \angle 2$ $\angle 3 \; and \; \angle 4$
Linear Pair	2 angles that are adjacent and sum to 180^o (form a line)	 $\angle 1 \; and \; \angle 2$

Pairs of Angles	Definition	Sketch
Supplementary Angles	2 or more angles that sum to 180° (they don't have to be adjacent)	

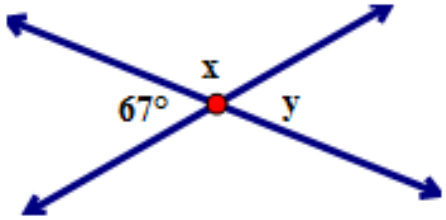
Pairs of Angles	Definition	Sketch
Complementary Angles	2 or more angles that sum to 90^o (they don't have to be adjacent)	

Pairs of Angles	Definition	Sketch
Transversal	A line that passes through two lines in the same plane.	

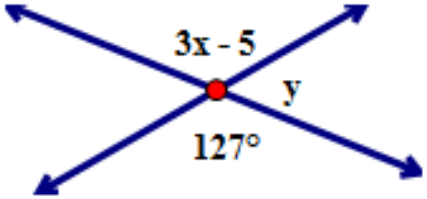
Example Problems:

1. Solve the following.

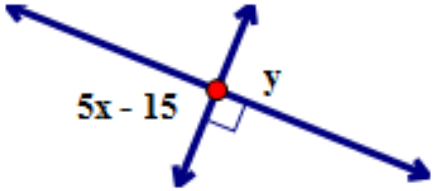
a) x = 113° y = 67°



b) x = 44° y = 53°



c) x = 21° y = 90°



$x + 67 = 180$

$x = 113°$

$y + 127 = 180$

$y = 53°$

$3x - 5 = 127$

$3x = 132$

$x = 44°$

$5x - 15 = 90$

$5x = 105$

$x = 21°$

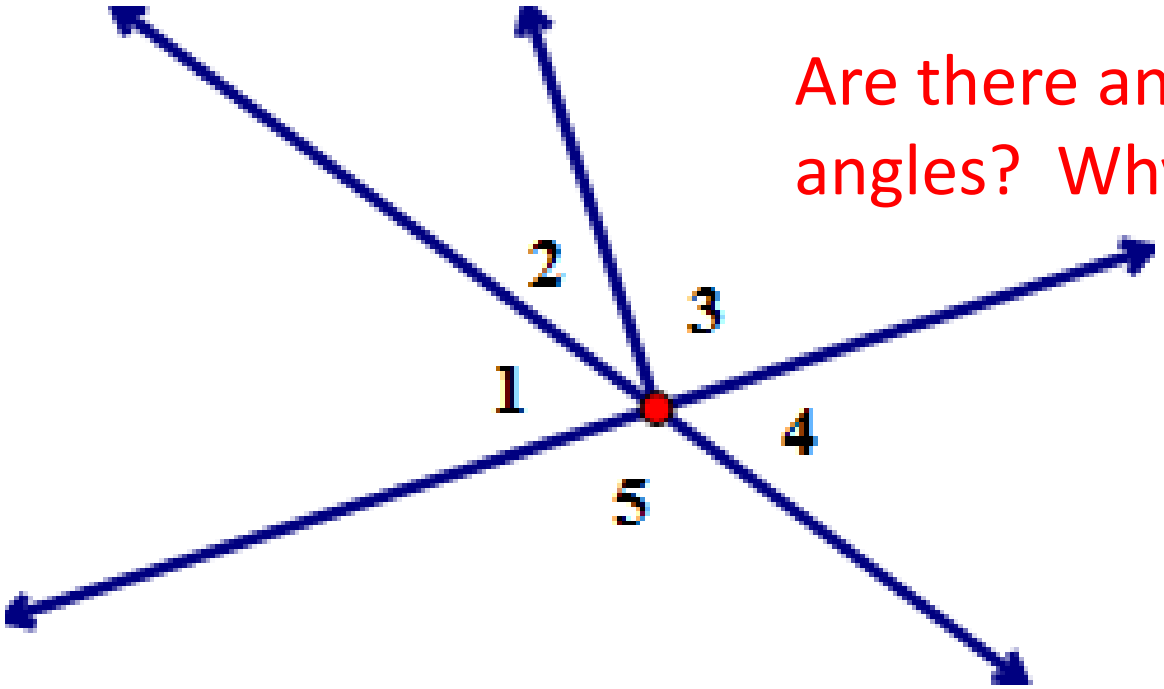
2. $\angle 5$ and $\angle 3$ are vertical angles. T or F

3. $\angle 1$ and $\angle 5$ are a linear pair. T or F

4. $\angle 4$ and $\angle 3$ are adjacent angles. T or F

5. $\angle 4$ and $\angle 1$ are vertical angles. T or F

6. $\angle 3$ and $\angle 4$ are a linear pair. T or F



Are there any complementary angles? Why or why not?

180°

7. If ∠A and ∠B are supplements and m∠A = 150°, what is m∠B? 30°

180 - 150

90°

8. If ∠A and ∠B are complements and m∠A = 27°, what is m∠B? 63°

90 - 27

≅

9. If ∠A and ∠B are vertical angles and m∠A = 36°, what is m∠B? 36°

180°

10. If $\angle A$ and $\angle B$ are a linear pair and $m\angle A = 2x + 8$ and $m\angle B = 3x + 2$, what is the value of x? x = 34°

$2x + 8 + 3x + 2 = 180$

$5x + 10 = 180$

$5x = 170$

$x = 34$

$\cong$

11. If $\angle A$ and $\angle B$ are vertical angles and $m\angle A = 7x - 5$ and $m\angle B = 4x + 10$, what is the value of x? x = 5°

$7x - 5 = 4x + 10$

$3x = 15$

$x = 5$