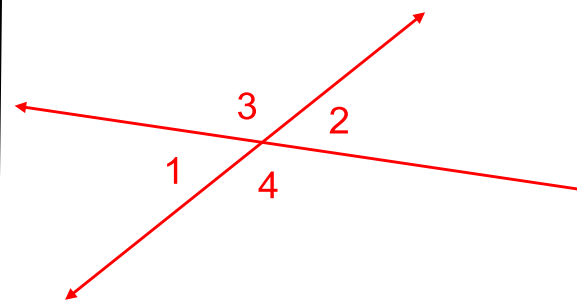
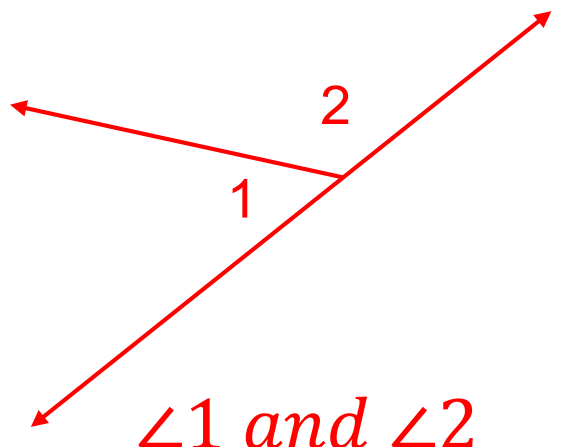
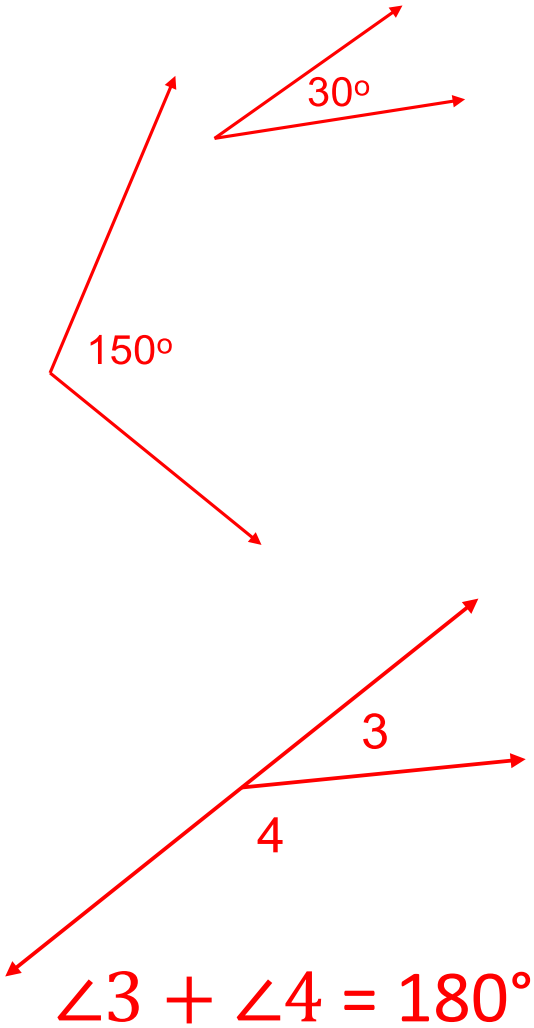


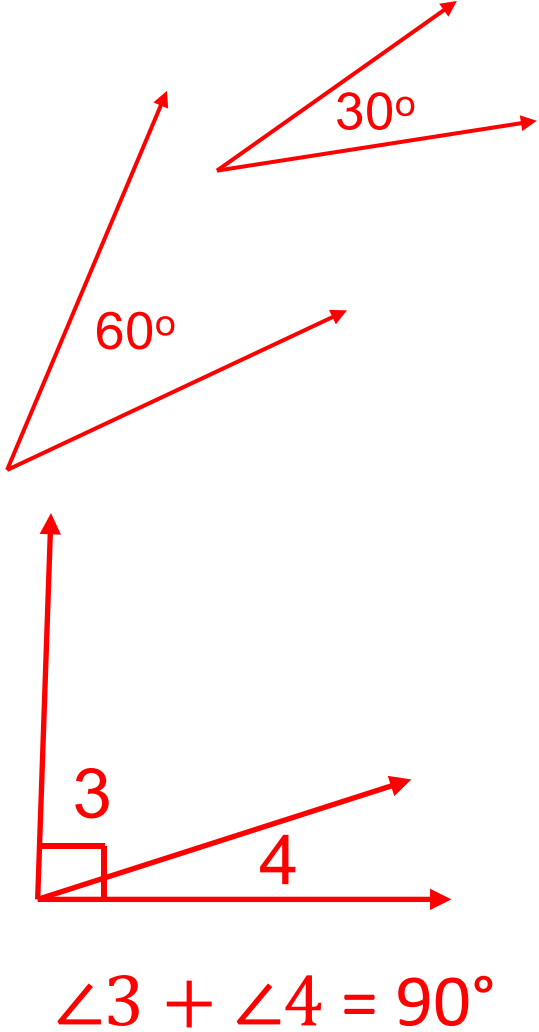
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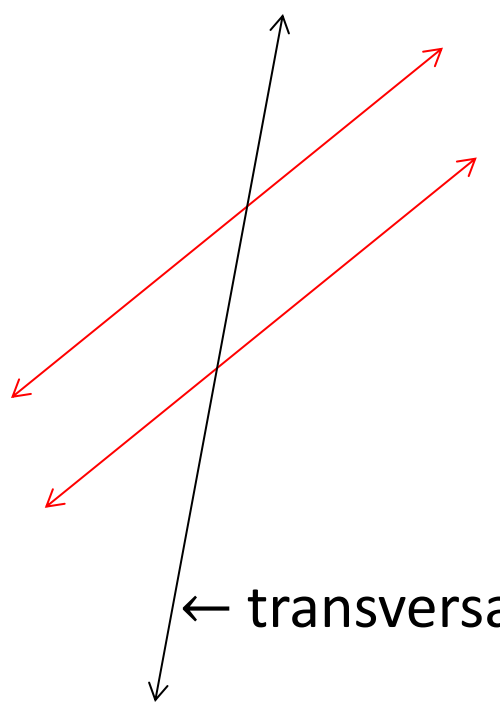
Angle Pairs

Pairs of Angles	Definition	Sketch
Adjacent Angles	Angles that share a vertex and a ray and NO interior points	<p>The sketch contains two diagrams. The top diagram shows a vertex with three rays: one red ray pointing up and to the right, one blue ray pointing up and to the right, and one red ray pointing horizontally to the right. The angle between the first two rays is labeled '1' (red), and the angle between the blue and red rays is labeled '2' (red). Below the diagram is the text $\angle 1$ and $\angle 2$ in red. The bottom diagram shows a vertex with three rays: one red ray pointing up and to the right, one blue ray pointing up and to the right, and one red ray pointing horizontally to the right. The angle between the first two rays is labeled '3' (red), and the angle between the blue and red rays is labeled '4' (red). Below the diagram is the text $\angle 3$ and $\angle 4$ in red.</p>

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

Pairs of Angles	Definition	Sketch
Supplementary Angles	2 or more angles that sum to 180° (they don't have to be adjacent)	 <p>The sketch contains two diagrams. The top diagram shows two separate angles. The first angle is formed by two rays meeting at a vertex, with one ray pointing up and to the right, and the other pointing down and to the right; it is labeled 150°. The second angle is also formed by two rays meeting at a vertex, with one ray pointing up and to the right, and the other pointing down and to the right; it is labeled 30°. The bottom diagram shows two adjacent angles forming a straight line. The first angle is labeled 3 and the second angle is labeled 4. Below the diagram is the equation $\angle 3 + \angle 4 = 180^\circ$.</p>

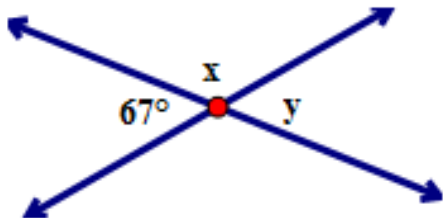
Pairs of Angles	Definition	Sketch
Complementary Angles	2 or more angles that sum to 90° (they don't have to be adjacent)	 <p>The sketch contains two diagrams. The top diagram shows two separate angles. The first angle is formed by two rays meeting at a vertex, with the label 60° between them. The second angle is also formed by two rays meeting at a vertex, with the label 30° between them. The bottom diagram shows two adjacent angles sharing a common vertex and a common side. The first angle is labeled with the number 3, and the second angle is labeled with the number 4. A small square symbol is drawn at the common vertex to indicate a right angle. Below this diagram is the equation $\angle 3 + \angle 4 = 90^\circ$.</p>

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

Example Problems:

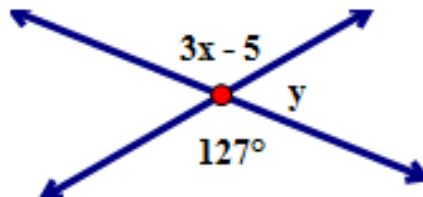
1. Solve the following.

a) $x = \underline{113^\circ}$ $y = \underline{67^\circ}$



$$x + 67 = 180$$
$$x = 113^\circ$$

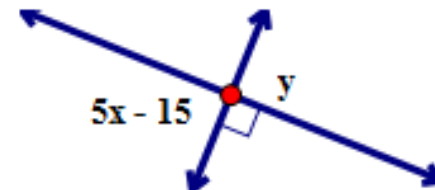
b) $x = \underline{44^\circ}$ $y = \underline{53^\circ}$



$$y + 127 = 180$$
$$y = 53^\circ$$

$$3x - 5 = 127$$
$$3x = 132$$
$$x = 44^\circ$$

c) $x = \underline{21^\circ}$ $y = \underline{90^\circ}$



$$5x - 15 = 90$$
$$5x = 105$$
$$x = 21^\circ$$

□

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.

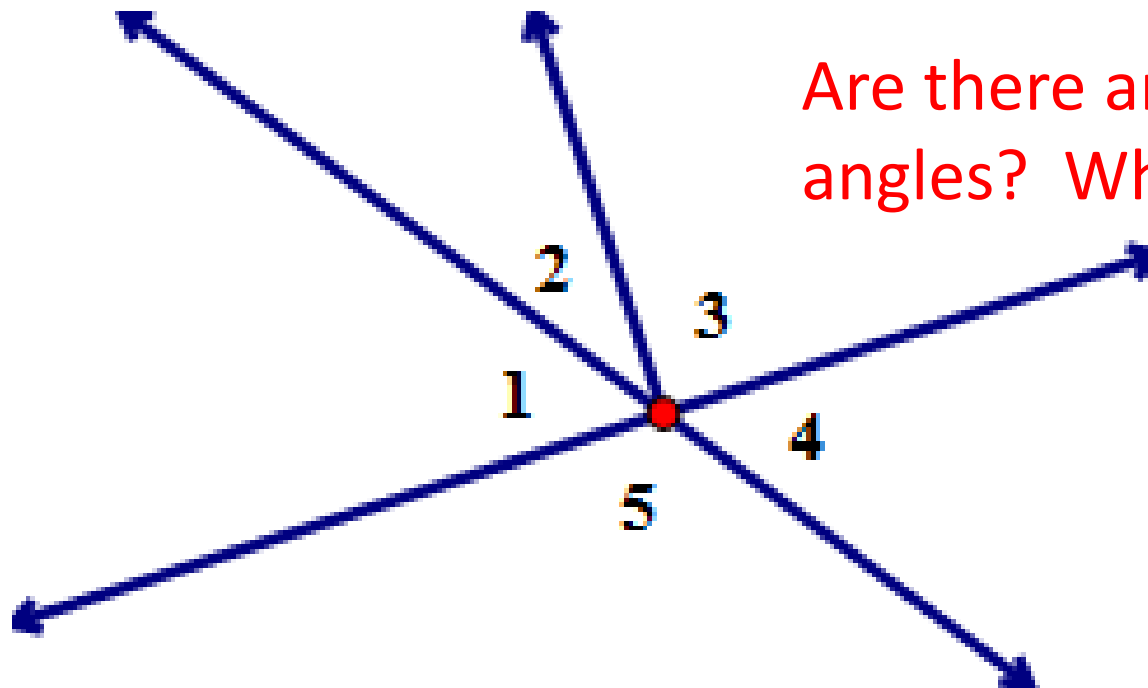
T or F

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?

7. If $\angle A$ and $\angle B$ are supplements and $m\angle A = 150^\circ$, what is $m\angle B$? 30°
 $180 - 150$

8. If $\angle A$ and $\angle B$ are complements and $m\angle A = 27^\circ$, what is $m\angle B$? 63°
 $90 - 27$

9. If $\angle A$ and $\angle B$ are vertical angles and $m\angle A = 36^\circ$, what is $m\angle B$? 36°

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 ? $x = \underline{34^\circ}$

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

$$5x + 10 = 180$$

$$5x = 170$$

$$x = 34$$

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 ? $x = \underline{5^\circ}$

$$7x - 5 = 4x + 10$$

$$3x = 15$$

$$x = 5$$