Stair Railing: A stair railing is designed as shown in the figure.
Use the angles identified in the figure to **name *two* pairs** of the indicated type of angle pair.

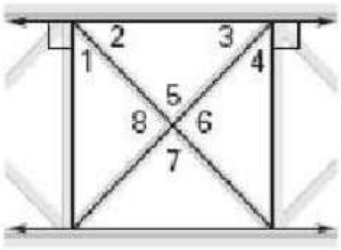
25. Complementary angles ∠1 &∠2 ∠3 &∠4

26. Supplementary angles ∠5 &∠8 ∠6 &∠7

28. Vertical angles ∠5 &∠7 ∠8 &∠6

29. Linear pair ∠8 &∠7 ∠6 &∠7

30. Adjacent angles ∠ &∠ ∠ &∠



Using the diagram, tell whether the angles are *vertical angles*, a *linear pair*, or *neither*.

31. Linear Pair ∠1 and ∠2

32. Vertical ∠'s ∠1 and ∠3

33. Neither ∠2 and ∠4

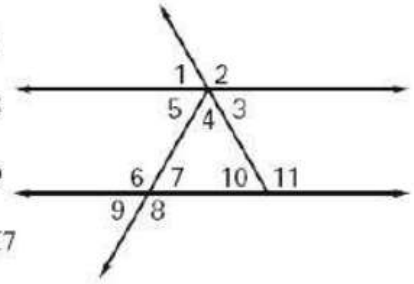
34. Neither ∠4 and ∠5

35. Vertical ∠'s ∠6 and ∠8

36. Linear Pair ∠8 and ∠9

37. Linear Pair ∠11 and ∠10

38. Neither ∠10 and ∠7



Draw a picture and write an equation to help you solve the following problems.

39. The measure of one angle is 7 times the measure of its *complement*. Find the measure of each angle.

equal

$X = 7(90-X)$

$X = 630-7X$

$+7X \quad +7X$

$\frac{8X}{8} = \frac{630}{8}$

$X = 78.75$

1st: X 2nd: $90-X$ 11.25

40. The measure of one angle is 38° less than the measure of its *supplement*. Find the measure of each angle.

$X = (180-X)-38$

$X = 142-X$

$2X = 142$

$X = 71$

1st	Supplement
X	$180-X$

109°