

# 1.6 Describing Pairs of Angles

Date \_\_\_\_\_

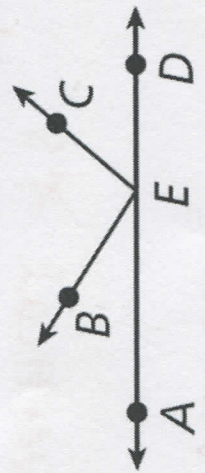
Lesson Title \_\_\_\_\_

## Pairs of Angles

Adjacent angles = angles that share a ray

Linear pair adjacent  $\angle$ 's that add up to  $180^\circ$

$\angle AEB \ \& \ \angle BEC$   
 $\angle AEB \ \& \ \angle BED$

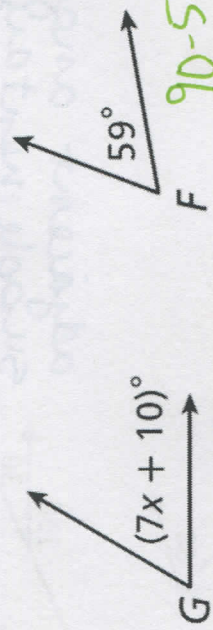
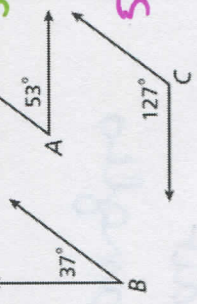


## Complementary VS Supplementary Angles

Complementary =  $\angle$ 's that add to  $90^\circ$

Supplementary =  $\angle$ 's that add to  $180^\circ$

$37 + 53 = 90$   
 $53 + 127 = 180$



$180 - (7x + 10)$   
 $180 - 7x - 10 = (170 - 7x)$

## Tasks

- An angle is  $10^\circ$  more than 3 times the measure of its complement. Find the measure of the complement.

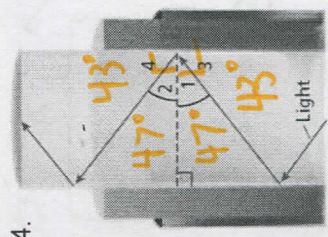
$x = 3(90 - x) + 10$   
 $x = 270 - 3x + 10$   
 $4x = 280$   
 $x = 70 \Rightarrow 90 - 70 = 20^\circ$

- An angle's measure is  $12^\circ$  more than half the measure of the supplement. Find the measure of the angle.

$x = \frac{1}{2}(180 - x) + 12$   
 $x = 90 - \frac{1}{2}x + 12$   
 $3x = 204$   
 $x = 68$

- The supplement of an angle is 36 less than twice the supplement of the complement of the angle. Find the measure of the supplement.

$180 - x = 2(180 - (90 - x)) - 36$   
 $180 - x = 2(180 - 90 + x) - 36$   
 $180 - x = 2(90 + x) - 36$   
 $180 - x = 180 + 2x - 36$   
 $-3x = -36$   
 $x = 12 \Rightarrow 180 - 12 = 168^\circ$



$90 - 47 = 43$

$m\angle 2 = 47^\circ$   
 $m\angle 3 = 43^\circ$   
 $m\angle 4 = 43^\circ$

Still need help with:



### Vertical Angles

angles created by two intersecting lines. vertical  $\angle$ 's are always  $\cong$ .

$$x + 14 = 5x + 10$$

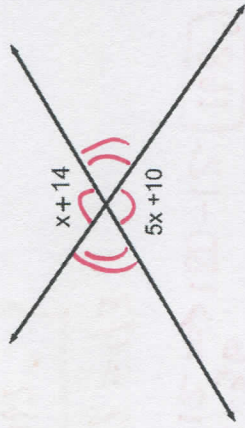
$$4 = 4x$$

$$\boxed{1 = x}$$

check!  $\checkmark$

$$1 + 14 = 15^\circ$$

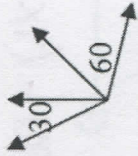
$$5(1) + 10 = 15^\circ$$



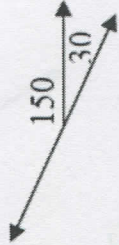
### Categories

Complementary, supplementary, adjacent, linear pair, vertical

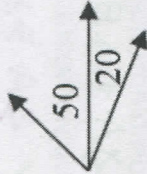
Complementary  $\angle$ 's



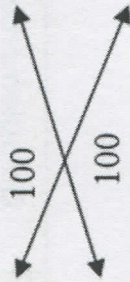
adjacent angles  
supplementary  $\angle$ 's  
linear pair



adjacent angles



vertical  $\angle$ 's



vertical  $\angle$ 's  
supplementary  $\angle$ 's

