Ex 3: An angle is 3° less than twice the measure of its supplement. Find the measure of the supplement of the angle.

x = angle

$180 - x$ = supplement

$x = 2(180 - x) - 3$

$x = 360 - 2x - 3$

$3x = 357$

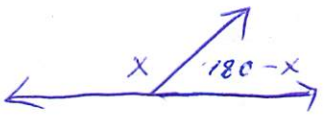
$x = 119$

$x = 119$

supp $= 180 - 119$

$= 61°$

Linear pair



OR another way

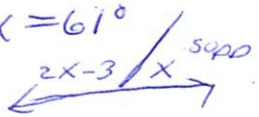
x = supplement

$2x - 3$ = angle

$x + 2x - 3 = 180$

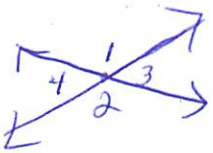
$3x = 183$

$x = 61°$

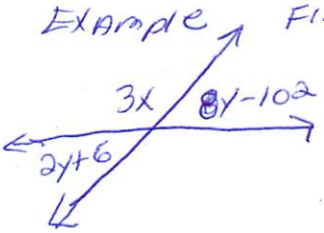


Vertical angles - are a NON adjacent angles formed by 2 intersecting lines and they are congruent

$\angle 1 \cong \angle 2$ $\angle 3 \cong \angle 4$



Example Find x & y



$8y - 102 = 2y + 6$

$6y = 108$

$y = 18$

$2(18) + 6$

$36 + 6$

42

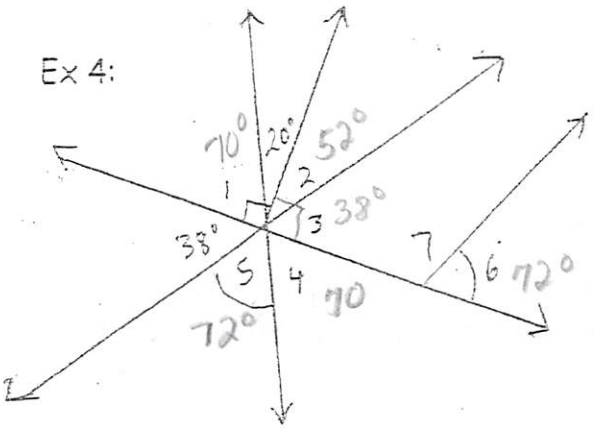
so $3x + 42 = 180$

$3x = 138$

$x = 46$

Practice: Find the measure of each angle in the pictures below.

Ex 4:



$\angle 1 = 90 - 20$

$70°$

$\angle 2 = 72 - 20$

52

$\angle 3 = 90 - 52$

38

$\angle 4 = 70°$

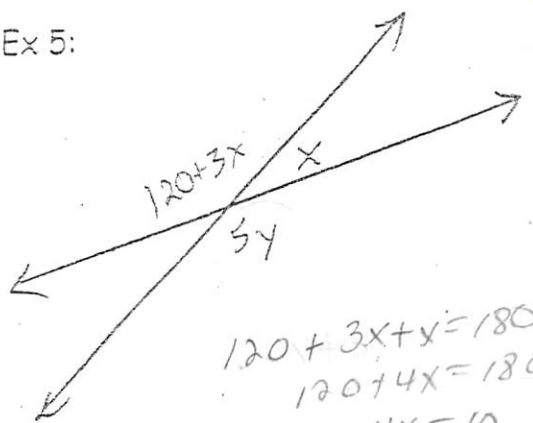
$\angle 5 = 180 - 70 - 38$

$110 - 38 = 72$

$\angle 6 = 72°$

$\angle 7 = 180 - 72 = 108$

Ex 5:



$120 + 3x + x = 180$

$120 + 4x = 180$

$4x = 60$

$x = 15$

$120 + 3(15)$

$120 + 45$

165

$5y = 165$

$y = 33$