Draw a picture write an equation and solve.

EX1 Find the measures of two complementary angles if the difference in their measures is 18°.

① $x + y = 90°$

② $x - y = 18$

$x - y = 18$ get x alone

$\underline{+y \quad +y}$

$x = y + 18$

$x + 36 = 90$

$\boxed{x = 54°}$

$y + 18 + y = 90$

$2y + 18 = 90$

$2y = 72$

$\boxed{y = 36}$

Ex2 If a supplement of an angle has a measure 78 less than the measure of half of the angle, what are the measures of the angles.

$x + y = 180$

$x = \boxed{\tfrac{1}{2}y - 78}$

$\tfrac{1}{2}y - 78 + y = 180$

$\tfrac{3}{2}y - 78 = 180$ $x + 172 = 180$

$\tfrac{3}{2}y = 258$ $\boxed{x = 8°}$

$\boxed{y = 172°}$

Ex3 Find the measures of two angles that form a linear pair, if the measure of one angle is 4° more than ~~the 8 times the other~~ The other.

$x + y = 180$

$x = y + 4$

$y + 4 + y = 180$

$2y + 4 = 180$

$2y = 176$

$\boxed{y = 88°}$

$x = 88 + 4$

$\boxed{x = 92°}$