

Age Word Problems

**Use LESC to solve the following age problems

1) The age of Mary & Mike total 26 years. Mary's age plus three times Mike's age is 50. How old is each person?

E	E	S	C
<p>Let $x =$ Mike's age $26 - x =$ Mary's age</p>	$26 - x + 3x = 50$ $\begin{array}{r} 2x + 26 = 50 \\ \underline{-26 \quad -26} \\ 2x = 24 \\ \underline{\quad \quad \quad} \\ x = 12 \end{array}$ $26 - x = 14$	<p>Mike is 12 yrs old + Mary is 14 yrs old</p>	$12 + 14 = 26$ <hr/> $3(12) = 36$ $36 + 14 = 50 \checkmark$

2) Laura's age is 4 less than Emma's and John's age is 3 less than twice Emma's. If the sum of their ages is 53, then how old is each person?

E	E	S	C
<p>Let $x =$ Emma's age $x - 4 =$ Laura's age $2x - 3 =$ John's age</p>	$x + x - 4 + 2x - 3 = 53$ $\begin{array}{r} 4x - 7 = 53 \\ \underline{+7 \quad +7} \\ 4x = 60 \\ \underline{\quad \quad \quad} \\ x = 15 \end{array}$ $x - 4 = 11$ $2x - 3 = 27$	<p>Emma is 15 yrs old Laura is 11 yrs old + John is 27 yrs old</p>	$15 - 4 = 11 \checkmark$ <hr/> $2(15) = 30$ $30 - 3 = 27$ <hr/> $15 + 11 + 27 = 53 \checkmark$

3) Steve is 5 years older than Peter. If the sum of their ages is at most 37 years, what is the oldest that Peter can be?

E	I	S	C
<p>Let $x = \text{Peter's age}$ $x + 5 = \text{Steve's age}$</p>	$x + x + 5 \leq 37$ $2x + 5 \leq 37$ $\begin{array}{r} 2x + 5 \leq 37 \\ -5 \quad -5 \\ \hline 2x \leq 32 \\ \frac{2x}{2} = \frac{32}{2} \\ x \leq 16 \end{array}$ <p>20</p> $x + 5 \leq 21$ <p>25</p>	<p>The oldest Peter can be is at most 16 yrs old</p>	$10 + 5 = 21 \checkmark$ $16 + 21 = 37$ $37 \leq 37 \checkmark$ <hr/> $20 + 5 = 25 \checkmark$ $20 + 25 = 45$ $45 \neq 37 \checkmark$

4) Three brothers have ages that are consecutive odd integers. The difference between the age of the oldest and twice the age of the youngest is twenty-four less than the middle brother's age. Find their ages.

E	I	S	C
<p>$x = \text{the youngest brother's age}$ $x + 2 = \text{the middle brother's age}$ $x + 4 = \text{the oldest brother's age}$</p>	$x + 4 - 2x = x + 2 - 24$ $\begin{array}{r} -x + 4 = x - 22 \\ +x \quad +x \\ \hline 4 = 2x - 22 \\ +22 \quad +22 \\ \hline 26 = 2x \\ \frac{26}{2} = \frac{2x}{2} \\ x = 13 \\ x + 2 = 15 \\ x + 4 = 17 \end{array}$	<p>the youngest brother is 13 yrs old, the middle brother is 15 yrs old & the oldest brother is 17 yrs old.</p>	$2(13) = 26$ $17 - 26 = -9$ $15 - 24 = -9$

5) The age of Matt & Sally total 27 years. Sally's age plus twice Matt's age is 40. How old is each person?

E	I	S	C
<p>Let $x = \text{Sally's age}$ $27 - x = \text{Matt's age}$</p>	$x + 2(27 - x) = 40$ $\begin{array}{r} x + 54 - 2x = 40 \\ -x + 54 = 40 \\ -54 \quad -54 \\ \hline -x = -14 \\ \frac{-x}{-1} = \frac{-14}{-1} \\ x = 14 \\ 27 - x = 13 \end{array}$	<p>Sally is 14 yrs old & Matt is 13 yrs old</p>	$14 + 13 = 27 \checkmark$ $2(13) = 26$ $26 + 14 = 40 \checkmark$