TAKEAWAY

To solve age problems, it is helpful to organize the ages in a table.

The headings should show time periods such as past, now (present), and future.

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8 Algebra CC **HW #_____**

For each problem, define all unknowns with variable expressions, set up an equation and solve.

1. Al is twice as old as Judy. Three years ago Al was 3 times as old as Judy. Find their ages now.

	present	past -3
Al	$2x$	$2x-3$
Judy	x	$x-3$

Al's past age = 3 (Judy's past age)

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

$2x-3 = 3x-9$

$-3 = x-9$

$x = 6$

now:
Al: 12 years
Judy: 6 years

2. The total age of a woman and her son is 51 years. Three years ago, the woman was eight times as old as her son. How old is her son now?

	present	past -3
woman	x	$x-3$
son	$51-x$	$51-x-3$ $48-x$

woman's past age = 8 (son's past age)

$x-3 = 8(48-x)$

$x-3 = 384-8x$

$-3 = 384-9x$

$-387 = -9x$

$43 = x$

son is $51-43 = 8$ years old now

3. A man is 40 years old and his son is 8 years old. In how many years will the man be three times his son's age?

	present	future $+x$
man	40	$40+x$
son	8	$8+x$

man's future age = 3 (son's future age)

$40+x = 3(8+x)$

$40+x = 24+3x$

$40 = 24+2x$

$16 = 2x$

$x = 8$

in 8 years