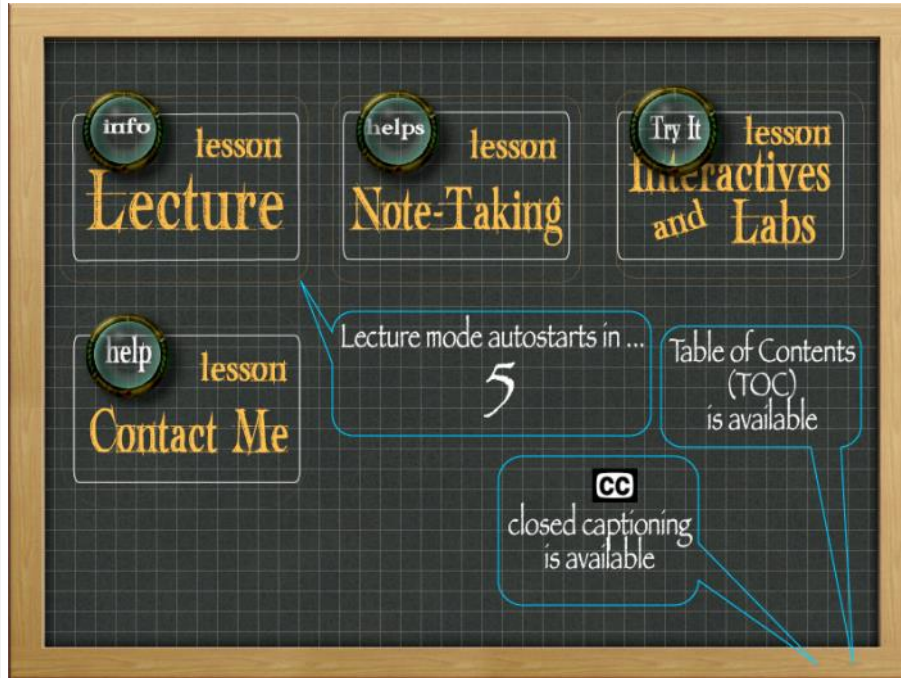


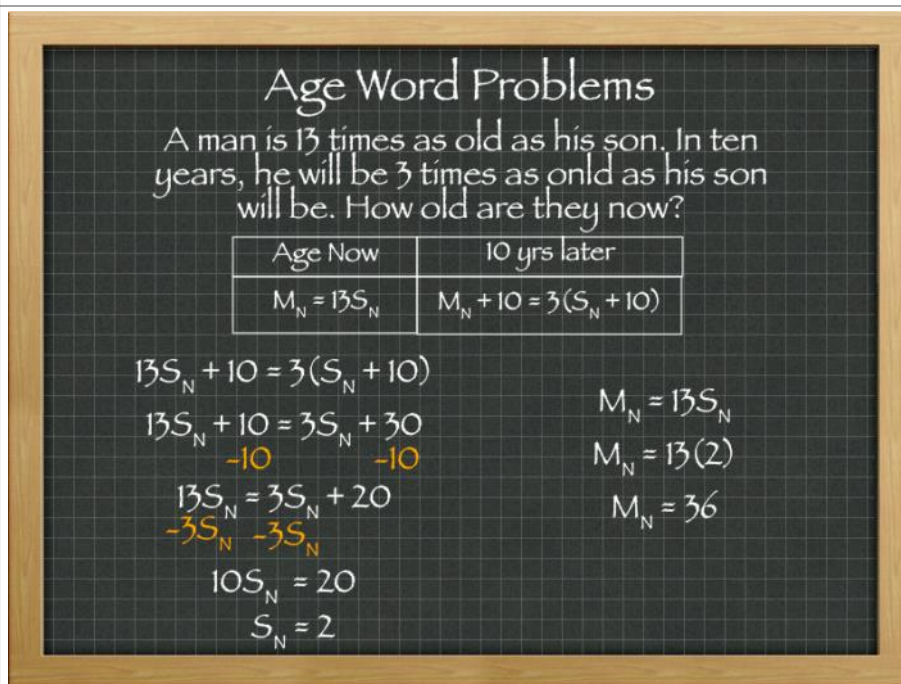
# Age Word Problems

Thursday, January 19, 2012  
5:49 PM

Slides



Notes



You have done age problems off and on since 6th grade. As time went by, algebra was worked in. Now, you will add a new level to these. You will have information now for two different time periods.

It can help to create a quick chart. In one column focus on the age now and in the other one focus on the information that is forward or backward in time.

In the age now, we can see from the problem that the man is 13 times as old as his son and you will be solving for their ages now. Let's set variables as  $M_N$  for the age of the man now and  $S_N$  for the son's age now with the relationship of 13 times the son's age.

Now, for ten years later, we will need to remember to add 10 to the man's and the son's age now and also show the relationship that the man is 3 times older than his son at that point.

These can be solved via substitution or elimination since they are simultaneous equations. Substitution will work best here. We will solve for the son's age.

Now we will plug that value in to solve for the man's age.

Try It

Five years ago Brenda was  $\frac{4}{5}$  as old as Layton. Ten years from now she will be  $\frac{7}{8}$  as old as Layton. Each one is how old?

5 years ago	10 years later
$B_N - 5 = \frac{4}{5} (L_N - 5)$	$B_N + 10 = \frac{7}{8} (L_N + 10)$

eliminate fraction just to make these easier

$5(B_N - 5) = 4(L_N - 5)$	$8(B_N + 10) = 7(L_N + 10)$
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eliminate parentheses

$5B_N - 25 = 4L_N - 20$	$8B_N + 80 = 7L_N + 70$
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$(5) 8B_N = 7L_N - 10$	$40B_N = 35L_N - 50$	$5B_N = 4L_N + 5$
$(-8) 5B_N = 4L_N + 5$	$-40B_N = -32L_N - 40$	$5B_N = 4(30) + 5$
	$0 = 3L_N - 90$	$\frac{5B_N = 125}{5 \quad 5}$
	$90 = 3L_N$	$B_N = 25$
	$L_N = 30$	

Congratulations!  
You have completed  
this topic

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