

Homework: Age Word Problems



Name: _____

Alg. 1 H - Date: Oct. 16

Glue this foldable on page 63.

PRACTICE PROBLEMS

1. Charlotte is one-ninth as old as her mother. In 3 years, she will be one-fifth as old as her mother will be then. Find their present ages.

	Present Age	future + 3
Charlotte <i>young</i>	$\frac{1}{9}x$ x	$\frac{1}{9}x+3$ $x+3$
Charlotte's mom <i>old</i>	x $9x$	$x+3$ $9x+3$

* 2 ways to do this problem

Equation: _____

$$\text{young} = \frac{1}{9}(\text{old}) \quad \text{or} \quad 5(\text{young}) = \text{old}$$

$$\frac{1}{9}x + 3 = \frac{1}{5}(x + 3)$$

$$45 \left[\frac{1}{9}x + 3 = \frac{1}{5}x + \frac{3}{5} \right]$$

$$5x + 135 = 9x + 9(3)$$

$$5x + 135 = 9x + 27$$

$$\begin{array}{r} 5x \\ 5x + 135 = 9x + 27 \\ \hline 135 = 4x + 27 \\ -27 \quad -27 \\ \hline 108 = 4x \\ \frac{108}{4} = \frac{4x}{4} \\ 27 = x \end{array}$$

$$5(x + 3) = 9x + 3$$

$$5x + 15 = 9x + 3$$

$$\begin{array}{r} -5x \quad -5x \\ \hline 15 = 4x + 3 \\ -3 \quad -3 \\ \hline 12 = 4x \\ \frac{12}{4} = \frac{4x}{4} \\ 3 = x \\ 9(3) = 27 \end{array}$$

Answer: Charlotte's present age is 3 and her mom's present age is 27.

HOMEWORK:

2. Scarlett is 22 years old and Courtney is 10 years old. In how many years will Scarlett be twice as old as Courtney will be then?

	Present Age	future + x
Scarlett <i>old</i>	22	22 + x
Courtney <i>young</i>	10	10 + x

2(young) = old

Equation: $2(10+x) = 22+x$

Answer: In 2 years.

$$\begin{array}{r} 20 + 2x = 22 + x \\ -x \qquad \qquad -x \\ \hline 20 + x = 22 \\ -20 \qquad -20 \\ \hline x = 2 \end{array}$$

3. Tyler is now 3 times as old as Ahad. Four years ago, Tyler was 4 times as old as Ahad was. Find their present ages. Show work on page 64.

	Present Age	pastage -4
Tyler <i>old</i>	3x	3x - 4
Ahad <i>young</i>	x	x - 4

4(young) = old

Equation: $4(x-4) = 3x-4$

Answer: Tyler's present age is 36 and Ahad's present age is 12

4. The sum of a man's age and his daughter's age is 50 years. Eight years from now, the man will be twice as old as his daughter will be then. Find the present age of each.

	Present Age	future + 8
Daughter	x	x + 8
Man	50 - x	50 - x + 8 = 58 - x

2(young) = old *simply*

Equation: $2(x+8) = 58-x$

Answer: The daughter's present age is 14 and the man's present age is 36.

5. James is now three times as old as his brother Chris. In 5 years, James will be twice as old as Chris will be then. Find their present ages.

	Present Age	future + 5
James <i>old</i>	3x	3x + 5
Chris <i>young</i>	x	x + 5

2(young) = old

Equation: $2(x+5) = 3x+5$

Answer: James is 15 years old and Chris is 5 years old.

Show work for #s 3 - 5 on page 64.

Hw: Age word problems

10/16

$$\begin{array}{r}
 3) \quad 4(x-4) = 3x-4 \\
 \quad 4x-16 = 3x-4 \\
 \quad \underline{-3x \quad -3x} \\
 \quad \quad x-16 = -4 \\
 \quad \quad \underline{+16 \quad +16} \\
 \quad \quad \quad x = 12
 \end{array}$$

Ahad = $x = 12$

Tyler = $3(12) = 36$

$$\begin{array}{r}
 4) \quad 2(x+8) = 58-x \\
 \quad 2x+16 = 58-x \\
 \quad \underline{-2x \quad -2x} \\
 \quad \quad 16 = 58-3x \\
 \quad \quad \underline{-58 \quad -58} \\
 \quad \quad \quad -42 = -3x \\
 \quad \quad \quad \underline{-3 \quad -3} \\
 \quad \quad \quad \quad x = 14
 \end{array}$$

daughter = $14 = x$

father = $50-14 = 36$

$$\begin{array}{r}
 5) \quad 2(x+5) = 3x+5 \\
 \quad 2x+10 = 3x+5 \\
 \quad \underline{-2x \quad -2x} \\
 \quad \quad 10 = x+5 \\
 \quad \quad \underline{-5 \quad -5} \\
 \quad \quad \quad x = 5
 \end{array}$$

Chris = $5 = x$

James = $3(5) = 15$ yrs