

**Solution.**

We have a system of two equations:

$$\begin{cases} \frac{A}{B} = \frac{7}{4}, \\ (A+8) - (B+8) = X; \end{cases} \quad \begin{cases} A = \frac{7B}{4}, \\ A - B = X; \end{cases}$$

where X is the difference between their ages,  $A \in \mathbb{Z}, B \in \mathbb{Z}$ .

Therefore  $\frac{7B}{4} - B = X$ ,

$$\frac{3B}{4} = X$$

1. If  $X=5$  then  $B = 6\frac{2}{3}$ ,  $A = 11\frac{2}{3}$ . So A,B are not integer and  $X=5$  is not a right answer
2. If  $X=10$  then  $B = 13\frac{1}{3}$ ,  $A = 23\frac{1}{3}$ . So A,B are not integer and  $X=10$  is not a right answer
3. If  $X=15$  then  $B=20$ ,  $A=35$ . A,B are integer and  $X=15$  is a right answer

**Answer.**

15 years