*Eight years ago, Heather was twice as old as her brother David. Today, she is 13 years older than him. How old is she?*

**Solution**

We can create two equations.

1.  Eight years ago, Heather was twice as old as her brother David:

$$t_H - 8 = 2(t_D - 8)$$

$$t_H - 8 = 2t_D - 16$$

$$t_H = 2t_D - 16 + 8$$

$$t_H = 2t_D - 8$$

2.  She is 13 years older than him:
$$t_H = t_D + 13$$

Compare the left sides for $t_H$ from two equations:

$$t_D + 13 = 2t_D - 8 \rightarrow t_D = 21$$

So

$$t_H = t_D + 13 = 34$$

**Answer**: Heather is 34 years old