

PROBLEM OF THE WEEK - 3

DORA'S MIX UP

DORA WAS STUDYING HER FAMILY TREE AND FOUND OUT THAT HER GRANDPARENTS ARE MIXED WITH FRENCH AND JAPANESE. HER GRANDMOTHER ON HER FATHER'S SIDE IS $\frac{1}{4}$ FRENCH AND $\frac{3}{4}$ JAPANESE, AND THE GRANDFATHER IS $\frac{3}{4}$ FRENCH AND $\frac{1}{4}$ JAPANESE. DORA'S GRANDMOTHER ON HER MOTHER'S SIDE IS $\frac{1}{8}$ FRENCH AND $\frac{7}{8}$ JAPANESE, AND THE GRANDFATHER IS $\frac{3}{8}$ FRENCH AND $\frac{5}{8}$ JAPANESE.

WHAT IS DORA'S EXACT PERCENTAGE OF EACH ETHNICITY (FRENCH AND JAPANESE)?

HELP:

FATHER'S SIDE:

GRANDMOTHER: $\frac{1}{4}$ FRENCH AND $\frac{3}{4}$ JAPANESE.

GRANDFATHER: $\frac{3}{4}$ FRENCH AND $\frac{1}{4}$ JAPANESE.

MOTHER'S SIDE:

GRANDMOTHER: $\frac{3}{8}$ FRENCH AND $\frac{5}{8}$ JAPANESE.

GRANDFATHER: $\frac{1}{8}$ FRENCH AND $\frac{7}{8}$ JAPANESE.

PROBLEM OF THE WEEK - ANSWER AND HELP

SINCE DORA IS HALF HER FATHER AND HALF HER MOTHER. WE NEED TO FIND THEIR ETHNICITY FIRST. ALSO, THE QUESTION IS ASKING FOR A PERCENTAGE SO WE NEED TO REWRITE THE FRACTION AS A PERCENT.

FATHER:

$$\text{FRENCH: } \frac{1}{4} + \frac{3}{4} = 25\% + 75\% = 100\% \quad \text{DIVIDE BY 2} = 50\% \text{ FRENCH} \quad *$$

$$\text{JAPANESE: } \frac{3}{4} + \frac{1}{4} = 75\% + 25\% = 100\% \quad \text{DIVIDE BY 2} = 50\% \text{ JAPANESE} \quad \langle \rangle$$

MOTHER:

$$\text{FRENCH: } \frac{3}{8} + \frac{1}{8} = \frac{4}{8} \quad \text{DIVIDE BY 2} = \frac{2}{8} = \frac{1}{4} = 25\% \text{ FRENCH} \quad *$$

$$\text{JAPANESE: } \frac{5}{8} + \frac{7}{8} = \frac{12}{8} \quad \text{DIVIDE BY 2} = \frac{6}{8} = \frac{3}{4} = 75\% \text{ JAPANESE} \quad \langle \rangle$$

USE THESE AMOUNTS.

NOW WE NEED TO FIND THE AVERAGE OF HER FATHER AND MOTHER.

$$* \quad \text{FRENCH: } 50\% + 25\% = 75\% \quad \text{DIVIDE BY 2} = 37.5\%$$

$$\langle \rangle \quad \text{JAPANESE: } 50\% + 75\% = 125\% \quad \text{DIVIDE BY 2} = 62.5\%$$

ANSWER: DORA IS 37.5% FRENCH AND 62.5% JAPANESE