

1 At the end of 2017

the value of Tamara's house was £220 000

the value of Rahim's house was £160 000

At the end of 2019

the value of Tamara's house had decreased by 20%

the value of Rahim's house had increased by 30%

At the end of 2019, whose house had the greater value?

You must show how you get your answer.

At the end of 2019:

$$\begin{aligned}
 \text{Tamara's House} &= 220\,000 - \frac{20}{100} (220\,000) \quad \textcircled{1} \\
 &= 220\,000 - 20 \times 2200 \\
 &= 220\,000 - 44\,000 \\
 &= 176\,000 \quad \textcircled{1}
 \end{aligned}$$

$$\begin{aligned}
 \text{Rahim's House} &= 160\,000 + \frac{30}{100} (160\,000) \\
 &= 160\,000 + 30 \times 1600 \\
 &= 160\,000 + 48\,000 \\
 &= 208\,000 \quad \textcircled{1}
 \end{aligned}$$

\therefore Rahim's house had the greater value at the end of 2019.

(Total for Question 1 is 4 marks)