Team Spitfire!

Anna Walker’s Design Your Own Display Challenge - Answers

Q1:
The IWM Spitfire Mark 1 uses **4.5 litres of fuel per minute** while it takes off and climbs to its display height, this takes **3 minutes**. How much fuel in litres is used for take-off and climbing?

\[4.5 \times 3 = 13.5L\]

Q2.
The Spitfire uses **4.5 litres of fuel per minute** during its **10-minute** display flight at Duxford. How much fuel will it use during the **10-minute** display?

\[4.5 \times 10 = 45L\]

Q3.
While it is cooling down and taxiing back to the hangar the Spitfire uses **2.25 litres of fuel per minute**. If this takes **3 minutes**, then how much fuel is used in these 3 minutes?

\[2.25 \times 3 = 6.75L\]

Q4.
How much fuel will the spitfire have used for these **three combined parts** of its display flight?

\[13.5 + 45 + 6.75 = 65.25L\]

Q5.
If the Spitfire started with **320 litres** of fuel in its tank how much will it have left at the end of the display?

\[320 - 65.25 = 254.75L\]
Q6:
During this 10-minute aerobatic display the pilot performs a loop which takes 20 seconds.
If the fuel burn is 4.5 litres per minute how many litres will it have used to complete this loop?

\[ \frac{4.5}{3} = 1.5 \text{L} \]

Q7:
The Spitfire Mk1 has two fuel tanks; the top tank holds 220 litres, while the bottom tank holds 170 litres
How much fuel in total do the tanks hold?

\[ 220 + 170 = 390 \text{L} \]

Q8:
The Spitfire takes off with full tanks and the plan is to land with 100 litres of fuel in reserve.
If you allow 20 litres to start, taxi and take-off how much fuel can the Spitfire use during the display?

\[ 390 - 20 = 370. \quad 370 - 100 = 270 \text{L} \]