17. Jamie conducted a survey on the food preferences of pupils at a school and discovered that 70% of the pupils like pears, 75% like oranges, 80% like bananas and 85% like apples. What is the smallest possible percentage of pupils who like all four of these fruits?

A at least 10% B at least 15% C at least 20%
D at least 25% E at least 70%

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17. A Let a, b, o and p represent the percentage of pupils liking apples, bananas, oranges and pears respectively.

As $a = 85$, there are 15% of pupils who do not like apples. As $b = 80$, $a \cap b$ is greater than or equal to $80 - (100 - 85) = 65$. As $o = 75$, $a \cap b \cap o$ is greater than or equal to $75 - (100 - 65) = 40$. Finally, as $p = 70$, $a \cap b \cap o \cap p$ is greater than or equal to $70 - (100 - 40) = 10$.

Hence the percentage of pupils who like all four fruits is at least 10%.