

MATHCOUNTS 2017–2018 Newsletter Poster Solution

A ZOO HAS 36 TOTAL GRIZZLY BEARS, BLACK BEARS & POLAR BEARS. IF 5/6 ARE NOT POLAR BEARS AND 25% ARE GRIZZLY BEARS, HOW MANY ARE BLACK BEARS?



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Solution 1: We are told there are 36 total bears and 3 types of bears at the zoo.

If $\frac{5}{6}$ of the bears are *not* polar bears, then $\frac{5}{6} \times 36 = 30$ of the bears are *either* black bears or grizzly bears.

If 25% of the bears are grizzly bears, then $0.25 \times 36 = 9$ of the bears are grizzly bears.

That means there are $30 - 9 = 21$ black bears at the zoo.

Solution 2: Alternatively, if $\frac{5}{6}$ of the bears are *not* polar bears, then $\frac{1}{6} \times 36 = 6$ of the bears are polar bears.

If 25% of the bears are grizzly bears, then $0.25 \times 36 = 9$ of the bears are grizzly bears.

Subtracting the number of polar bears and grizzly bears from the total number of bears, we get $36 - 6 - 9 = 21$ black bears.