Tree Diagrams

Exam – PreIB 4.AB 4

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DON'T FORGET TO EXPLAIN YOUR REASONING WHEN APPROPRIATE!

Problem 1.

In a factory, three machines – A, B and C – are used to make biscuits.

Machine A makes 25 % of the biscuits, B makes 45 % and C the rest. In addition, about 2 % of all the biscuits made by A are broken, 3 % of those made by B are broken and 5 % of those made by C are broken.

1. Draw a tree diagram representing the problem.
2. Calculate the probability that a randomly picked biscuit made by machine A is not broken.
3. Calculate the probability that a randomly picked biscuit is broken.
4. Assuming that a biscuit is broken, what's the probability it was **not** made by machine B?

Problem 2.

A bag contains 5 black and 2 white balls. Grace picks a ball at random and then replaces it (meaning, she replaces black with white or white with black). Grace then picks a second ball.

1. Draw a tree diagram representing the problem.
2. Compute the probability that Grace picks 2 black balls.