

Dr Oliver Mathematics

Worked Examples

Probability 7

From: Edexcel GCSE Mathematics June 2022 Paper (Non-Calculator)

1. A first aid test has two parts, a theory test and a practical test.
The probability of passing the theory test is 0.75.
The probability of passing only one of the two parts is 0.36.

(4)

The two events are independent.

Work out the probability of passing the practical test.

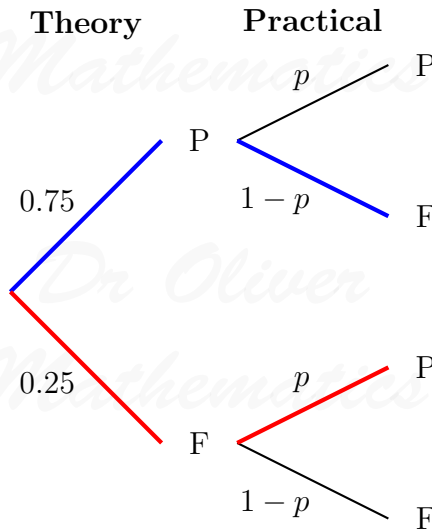
Solution

The key word in the fourth sentence is **independent** — and we can make up a tree diagram.

The probability of passing the theory test is 0.75 which means probability of passing the theory test is

$$1 - 0.75 = 0.25.$$

Let the probability of passing the the practical test be p . Then



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Now,

$$\begin{aligned}0.75 \times (1 - p) + 0.25 \times p &= 0.36 \Rightarrow 0.75 - 0.75p + 0.25p = 0.36 \\ &\Rightarrow 0.39 = 0.5p \\ &\Rightarrow \underline{\underline{p = 0.78}}.\end{aligned}$$

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