

GCSE – Mathematics only

Tier: Higher

Grade: A/A*



Topic: Multiplication law for dependent events, sampling without replacement

Starter

Calculate the following and simplify if possible:

(a) $\frac{12}{10} \times \frac{6}{13} =$

(b) $\left(\frac{4}{17} \times \frac{12}{20}\right) + \left(\frac{5}{14} \times \frac{19}{30}\right) =$

Skills:

1. Carys is throwing a dice and a coin. What are the chances that Carys will obtain:

(a) The number 3 on the dice and a head on the coin?

(b) Odd number and tail?

2. Deio is throwing a dice. Calculate the probability that he will get an even number or 4?

Top Tips!

The OR rule



The AND rule



Examination Question: 2014 Summer Linear P1 Higher Q19

Ralph does not like strawberry flavoured chocolates.

In a dark cinema during a film, Ralph selects two chocolates at random from a box.

There are 20 chocolates in the box.

Of these chocolates, 5 are strawberry flavoured.

Calculate the probability that at least one of the chocolates that Ralph selects is strawberry flavoured. [4]

Assessment for Learning

Video / QR code

GCSE – Mathematics only**Topic: Multiplication law for dependent events, sampling without replacement****Tier: Higher****Grade: A/A*****Starter**

Calculate the following and simplify if possible:

$$(a) \frac{12}{10} \times \frac{6}{13} = \frac{72}{130} = \frac{36}{65}$$

$$(b) \left(\frac{4}{17} \times \frac{12}{20}\right) + \left(\frac{5}{14} \times \frac{19}{30}\right)$$

$$= \frac{12}{85} + \frac{19}{84}$$

$$= \frac{2623}{7140}$$

Skills:

1. Carys is throwing a dice and a coin. What are the chances that Carys will obtain:

(a) The number 3 on the dice and a head on the coin? $\frac{1}{6} \times \frac{1}{2} = \frac{1}{12}$

(b) Odd number and tail? $\frac{3}{6} \times \frac{1}{2} = \frac{1}{4}$

2. Deio is throwing a dice. Calculate the probability that he will get an even number or 4?

$$\frac{3}{6} + \frac{1}{6} = \frac{2}{3}$$

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$P(\text{At least one strawberry}) = P(\text{strawberry, other}) + P(\text{other, strawberry}) + P(\text{strawberry, strawberry})$

$$= \left(\frac{5}{20} \times \frac{15}{19}\right) + \left(\frac{15}{20} \times \frac{5}{19}\right) + \left(\frac{5}{20} \times \frac{4}{19}\right)$$

$$= \frac{15}{76} + \frac{15}{76} + \frac{1}{19}$$

$$= \frac{17}{38}$$

Assessment for Learning**Video / QR code**