

Tarefa Básica 16

Probabilidade I

1. $S = \{1, 2, 3, 4, 5, \dots, 18, 19, 20\}$

Produto ímpar

ambos os fatores

ímpares

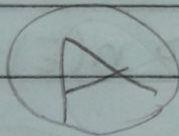
$$E = \{1, 3, 5, 7, 9, 11, 13, 15, 17, 19\}$$

$$n(E) = 10$$

$$C_{10,2} = \frac{10!}{2! \cdot 8!} = \frac{10 \cdot 9 \cdot 8!}{2 \cdot 1 \cdot 8!} = \boxed{45}$$

$$C_{20,2} = \frac{20!}{2! \cdot 18!} = \frac{20 \cdot 19 \cdot 18!}{2 \cdot 1 \cdot 18!} = \boxed{190}$$

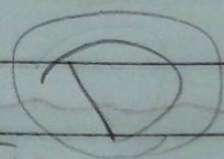
$$P(E) = \frac{45}{190} = \boxed{\frac{9}{38}}$$



2. $S = \{1, 2, 3, 4, 5, 6\} \Rightarrow n(S) = 6$

$$E = \{2, 4, 6\} \Rightarrow n(E) = 3$$

$$P(E) = \frac{n(E)}{n(S)} = \frac{3}{6} = \boxed{\frac{1}{2}}$$



3. fumante: 17% = 0,17

↳ mulher: 44% = 0,44

$$0,17 \cdot 0,44 = 0,075$$



$$4. (2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37)$$

I = bcb: d d d d d f f

$$S = C_{12,2} = \frac{12!}{2!10!} = \frac{12 \cdot 11 \cdot 10!}{2 \cdot 1 \cdot 10!} = 66$$

Pares impares consecutivos:

$$(3, 5); (5, 7); (11, 13); (17, 19); (29, 31) \Rightarrow n(E) = 5$$

$$P(E) = \frac{n(E)}{n(S)} = \frac{5}{66}$$

(B)

$$5. S = \{1, 2, 3 \dots 97, 98, 99\} \Rightarrow n(S) = 99$$

$$E = \{3, 6, 9 \dots 93, 96, 99\} \Rightarrow n(E) = 33$$

$$P(E) = \frac{n(E)}{n(S)} = \frac{33}{99} = \frac{1}{3}$$

(B)

$$6. n(S) = 6 \cdot 6 = 36$$

$$(1, 6); (6, 1); (2, 5); (5, 2); (3, 4); (4, 3)$$

$$n(E) = 6$$

$$P(E) = \frac{6}{36} = \frac{1}{6}$$

(C)